

ENCYCLOPEDIA OF WORLD ART

Vol. I

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REFERENCE
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ENCYCLOPEDIA OF WORLD ART



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FOREWORD

The vast output of art criticism in our time has created in various quarters the need for a major historical synthesis covering the arts of all periods and countries — a kind of “corpus,” both critical and documentary, which, within the framework of a single design and method, would seize the decisive factors and the most significant elements of that particular activity of the human mind which is mirrored in an infinite variety of art cultures. Although works attempting broad and comprehensive treatment have previously been published, they do not appear to have met this need fully, in some cases because of a too-subjective approach and in others because they were devoted to purely documentary or biographical content. In order to achieve what it hopes will be at once a more radical and more complex solution to this problem, the *Istituto per la Collaborazione Culturale* has tried to provide a unity of approach and a sound theoretical concept in the general planning of the work; it has also adopted a series of new criteria and dimensions suitable to the importance of such a project. The form chosen for the realization of this vast design is that of an Encyclopedia of World Art of the most systematic and inclusive kind. It has appeared to us that such a work could be authoritative only if its plan and execution were the result of broad international collaboration. The international character of the work is stamped upon all its aspects, from its organization down to the selection of illustrations; it extends also to its publishing. Keeping in mind the absolute necessity of international cooperation in the cultural field, the Institute has thought it proper to make the work accessible to a wider public than the Italian-speaking one and has been able to achieve this aim as a result of an agreement with the McGraw-Hill Book Company, Inc., of New York for the simultaneous issue of the Encyclopedia in Italian and in English. This cooperative relationship has been extended to include a continual and fruitful series of contacts between the Italian Editorial Board, which is responsible for both the general plan and the execution of the work, and an Editorial Advisory Committee set up by the American publisher. This committee, made up of well-known scholars who are also members of the International Council of the Encyclopedia, acts in a consultative capacity in connection with the translation from the original languages, while making available the specialized advice necessary to adjust the Italian text to the needs of the English-speaking public.

ISTITUTO PER LA COLLABORAZIONE CULTURALE

P R E F A C E

The purpose of Encyclopedia of World Art is to encompass our present knowledge of the arts within a single work that is factually complete within the limits of possibility, sensitive to the nuances of recent critical thought, unified in the organization of its vast and varied subject matter, reliable in scholarship by reason of the collaboration of specialists in each area, clearly addressed to its audience without requiring previous specialized preparation, and attractive and serviceable in the wealth and technical excellence of its illustrations.

The project is a direct reflection of the unprecedented, widespread, and powerful public interest in the arts evinced in our times. Such interest is evident in the multiplicity of art exhibitions; in the vocal and controversial programs of contemporary artists and schools; in the increased activity of collectors, including amateurs of limited means; in the conflict of critical opinion and its influence on the point of view of a growing public; in the broad diffusion of publications and reproductions; in the intensification of historical research into the arts of all times and all places; and in the increased effort to understand the significance of artistic creation.

Scholars, institutions, and publishers continually endeavor to provide suitable tools for progress in research and informational works directed to every category of readers. However, the literature, though constantly improving in accuracy and currency of information, in technical expertness, and in design, is still generally confined to the separate aspects under which the world of art presents itself. There are, for example, specialized publications for the technical discussion of theoretical, historical, and critical questions. Other works reconstruct and interpret single periods, schools of art, art centers, and sites, and the lives and works of individual artists. There are histories of art in the form of monographs, textbooks, and popularizations. An active production of critical writings and exhibition catalogues concentrates on the work of modern artists and art movements. And finally there is an extensive distribution of material aimed at collectors of handsome art reproductions. The very disparity of the available material seemed to emphasize the need for a scholarly compilation that would reunite within one framework the facts and critical views scattered throughout this broad literature.

The subject matter of the Encyclopedia consists of the representational arts in the broadest sense, that is, architecture, sculpture, and painting, and every other man-made object that, regardless of its purpose or technique, enters the field of esthetic judgment because of its form or decoration. No limits of any kind have been set with regard to the time, place, or cultural environment of the manifestations of artistic interest: Every aspect, from the most distant prehistoric times to the present day, from the art of the great centers of civilization to the products of primitive peoples, has been considered. The immense heritage of man's creativity has been studied historically by cycles of culture, epochs, schools, artists of major importance; in relation to religious ideas, to social needs, customs, and practical exigencies of life, as reflected in the types and iconographies; and analytically in relation to materials and techniques. It has been viewed from the standpoint of the development and traditional evolution of types of monument, and according to the centers and geographic groupings. In addition, attention has been given to society's interest in art as shown in conservation, restoration, preservation, and evaluation, as well as in the development of critical ideas and of historiography. Finally, those conceptual problems treating of the essence of art and its links with other activities of the human mind are broached.

The intent, in collecting and coordinating so huge a series of subjects, was not merely the presentation of a mass of information of unequalled vastness and fundamental usefulness. The plan, organically conceived from the start — perhaps for the first time in an undertaking of this sort — necessarily implies also the exploration of new relationships, the opening of new vistas, illumination of aspects and problems hitherto neglected or undefined. In order to apply the same standards of critical evaluation to phenomena barely touched upon by specific and systematic research, such as not a few of the ancient, Oriental, and primitive arts, as to such extensively known and thoroughly discussed bodies of material as the medieval and modern art of the West, it has been necessary to enter upon a

new and profound study of the former. This means that, within the limits of the present basic knowledge of the facts themselves, the Encyclopedia has undertaken to extend to world art the criteria and concepts of the most advanced research in history and art criticism. In this respect the unified handling, on a world-wide level, of typological studies of the monuments and objects, iconographic traditions, and techniques, has a value in itself. The work thus constitutes not merely a recapitulation of existing knowledge, but is intended to contribute directly to the progress of research and to the comprehension of art — to be not simply a report but also a message.

STRUCTURE OF THE ENCYCLOPEDIA. The problem of treating the phenomena of art in all their variety and complexity, in different perspectives, with keen sensitivity to every nuance of conception and critical attitude, and without bias, is not easily resolved within the conventional structure of a continuous expository work, such as a treatise on art, or a history of art, or an illustrated synthesis of artistic life, which imposes on its subject a sequential choice of a "first" and "then," a hierarchy of value judgments, a chronological succession, or geographic organization. None of the usual plans of classification or exposition can be followed rigidly without doing violence to the autonomy and the individuality of one aspect or another of the many-faceted world of art — without overemphasizing one and neglecting another, and in effect nullifying the completeness and balance of the whole view. An illumination of the phenomena of the world of art as envisioned here could be conceived only in the form of a series of separate but coordinated monographs, presented in alphabetical order without regard to their content, each in the manner of exposition best suited to its subject. The encyclopedia form seemed best suited to fulfill the comprehensive aims of the work — not because of any predilection of the editors, or following traditional habits of thinking, or yielding to possible public preference for this particular form, but in answer to the requirements of the material itself.

However, the Encyclopedia of World Art differs considerably in structure from other encyclopedic reference works. It presents an articulated collection of organic monographic studies of limited number and sufficient length to develop their content with the desired completeness. In order to preserve the character of the program as originally conceived, it was deemed advisable to avoid fragmentation of the material into numerous minor entries corresponding to all conceivable elements of the topics treated. The monographic handling, quite rigorously adhered to, sets the Encyclopedia of World Art apart from the form of the encyclopedias combining the nature of both dictionaries and encyclopedias. A sharp and clear distinction is drawn between the aims of a monographic encyclopedia and an analytic dictionary-index. The ample scope of many of the articles, the great number of the contributors, and the diversity of their backgrounds has brought into being an encyclopedia that becomes perforce a book "to be read" rather than "to be scanned" in the ordinary sense. Moreover, each of the monographs has its own flavor and character, its own personal and national background. At the same time, the advantages for reference of the dictionary-index form are appreciable, and in recognition of this fact the fifteenth volume of this encyclopedia is devoted to a full and thorough index of analytic character.

The illustrative plates and drawings, which are correlated throughout with the text entries, have been prepared not merely as embellishments to the text but as an integral part of the exposition. Wherever possible, new photographs have been utilized, with the objective of giving an added dimension to the work represented, of seeing it from a new and fresh point of view; in addition certain bodies of material that have rarely or never before been presented to the general public have been photographed especially for the Encyclopedia. The color plates also range into areas seldom penetrated in conventional art publications, in order to give the reader a feeling of the color reality of the objects and art techniques illustrated. Many journeys and an immense correspondence with the owners of the originals attest to the seriousness of the effort to achieve faithful color reproduction. Where the choice lay between sober fidelity and spurious color brilliance, a deliberate endeavor has been made to show the object as it is.

INTERNATIONAL COOPERATION. The program of the Encyclopedia of World Art, as set forth above, could not have been effectively carried out in any single national or cultural center. International cooperation was imposed by the very nature of the work.

For the preparation of the Encyclopedia articles, the most noted art specialists of all nations were invited to act as contributors, not only for the arts of their own countries but also for general subjects and for the special studies within their personal competence. The response to the invitations to collaborate was gratifyingly ready and enthusiastic. Worthy of special emphasis is the presence, alongside the European and American collaborators, of distinguished authorities from the Asian nations.

The scholarly sponsorship of the work was directly entrusted to a group of counselors chosen to represent, with the prestige of their names, the individual sections of the history of art and of the related disciplines. They, too,

were of the most diverse national origin (*see* International Council of Scholars: list on pages v, vi). In addition to their valued services as consultants, many of the counselors consented to participate in the work as authors.

The coordinate English edition has contributed, even in the early preparatory phases, to developing and confirming the world-wide scope, with respect to the programmatic handling, facilitating relations with English-speaking authors and consultants, and providing data.

The tasks of carrying out the editorial phase of the program and of coordinating the work for the Italian edition were assigned to a directing body of Italian scholars with qualified assistants (*see* list on page vii). The work was divided into sections corresponding to the traditional areas of ancient art, medieval art, modern art, Oriental art, and primitive art, all under a unified editorial direction. The English-language edition has been supervised by an Editorial Advisory Committee of eminent scholars (*see* page vii).

The directors and editors of the Encyclopedia are well aware of the difficulties inherent in the execution of their program. They are especially conscious of the serious problems confronting them in the study of certain spheres of civilization for which European critical literature, acquaintance with the monuments, development of esthetic perspectives, and history of art phenomena are inadequate. For some of these, the articles offered in the Encyclopedia are the first essays in these directions. Obviously no illusions can be entertained as to their perfection, the completeness of data, systematic organization of the ideas presented, or even as to the total elimination of errors. What the reader may be certain of is the effort made, insofar as it was humanly possible, to broaden and intensify the research in all directions, and to organize and reduce the enormous and diverse body of material so as to produce a balanced work thoroughly checked and verified in its scholarly substance and carefully edited with respect to its formal requirements.

In order to understand the standards adopted for presentation of the work, and, therefore, to read and consult it effectively, the reader should become familiar with the criteria outlined on the following pages.



EDITORIAL CRITERIA

DISTRIBUTION, COVERAGE, AND NATURE OF THE ARTICLES. The content of the Encyclopedia is divided into monographic articles of three major categories: (1) historical; (2) conceptual and systematic; (3) geographic. The articles are arranged in alphabetical order, without distinction between major (i.e., survey or key) entries and minor (i.e., analytic) entries.

In the choice of artists, schools, iconographic themes, techniques, concepts, periods, and areas for separate treatment, the criterion has been the isolation of a well-defined critical problem. Certain subjects, even though extensive and important, present essentially homogeneous phenomena that are best studied in a single article, whereas others are subdivided into multiple critical points of view requiring a number of separate studies. Thus the art of Egypt is covered in a single article, while the arts of ancient western Asia have been treated under several headings: ASIA, WEST: ANCIENT ART; ARABIAN PRE-ISLAMIC ART; ASIA MINOR, WESTERN: PRE-GREEK CULTURES; EARLY GREEK INFLUENCES; CYPRIOTE ART, ANCIENT; PHOENICIAN-PUNIC ART; HITTITE ART; MESOPOTAMIA; SYRO-PALESTINIAN ART; URARTU. Whether a subject is essentially self-contained or forms an aspect of a broader field that is covered in another article, each individual article is, from a critical point of view, autonomous (for example, MICHELANGELO in relation to the RENAISSANCE; METALWORK in relation to TECHNIQUES).

Occasionally in the application of the general criterion of selection to certain specific topics, the decision must be somewhat subjective and open to question—for example, the decision to cover wood carving in the general articles SCULPTURE and TECHNIQUES and ivory and bone carving separately. Nevertheless, the criterion has been applied as consistently as possible. One useful result of the system is the focusing of varying perspectives on an individual work or fact independently considered and discussed by scholars in a number of articles. For instance, a Gothic monument such as Notre-Dame de Paris may be analyzed from numerous points of view under the headings of ARCHITECTURE; FRENCH ART; FRANCE; GOTHIC ART; RESTORATION; and STRUCTURAL TYPES AND METHODS, to the undeniable enrichment of the understanding of the building.

The three major classifications of articles differ somewhat in organization and format and thus provide a guide or key to the structure of the Encyclopedia for easy and effective reference.

1. *Historical Articles.* The historical articles deal with great cycles of art civilization (for example, BAROQUE ART; CLASSIC ART), or with more circumscribed phenomena of individual cultures, schools, groups, etc. (for instance, COPTIC ART; HELLENISTIC-ROMAN ART; SURREALISM), or with individual artists (e.g., ALBERTI; PRAXITELES; WRIGHT). The articles on circumscribed phenomena, schools, etc., are to be considered not as more intensive treatments of parts of the great art movements and civilizations, but rather as special aspects which are not strictly confined to the more inclusive phenomenon, being marginal, or intermediary between two or more great cycles, or bound to local traditions which give rise to a peculiar fusion of styles (for instance, FRENCH ART; SPANISH AND PORTUGUESE ART with respect to GOTHIC ART; RENAISSANCE; BAROQUE ART, etc.). Similarly, the biographical articles represent the individual perspective of the artist in relation to his influence and critical acceptance in successive periods. Political, geographical, or ethnic divisions have been adopted when they correspond to valid cultural or artistic developments (e.g., CHINESE ART); or when they define aspects of the local tradition. From these articles, cross-references are made to the historico-monumental listings of individual countries in the geographical articles. But in general, preference has been given to the isolation, under a traditional or conventional name, of an authentic art phenomenon (for example, ARCHAIC ART; CLASSIC ART; HELLENISTIC ART; ATTIC AND BOROITIAN ART; GREEK ART, EASTERN; PELOPONNESIAN ART, etc., and the geographic article GREECE).

2. *Conceptual and Systematic Articles.* The conceptual and systematic articles study general problems of art from the viewpoint of theory or methodology (e.g., ART; BIBLIOGRAPHY; ESTHETICS; SPACE AND TIME; TREATISES), or that of recurring attitudes and phenomena (for instance, ANTIQUE REVIVAL; ECLECTICISM; PRIMITIVISM), or that of inspiration—religious, social, cultural, or psychological (for example, BUDDHISM; SEXUAL AND EROTIC ELEMENTS); typology (for example, ARMS AND ARMOR; COSTUME; FURNITURE); iconography (BIBLICAL SUBJECTS; MYTHOGRAPHY; HUMAN FIGURE); or technique (TECHNIQUES); or they treat of the great "genres" of art and the traditions of individual building and craft categories (e.g., ARCHITECTURE; CERAMICS; GOLD- AND SILVERWORK); or finally, they document society's interest in the work of art (for example, PATRONAGE; DEALING AND DEALERS; RESTORATION).

3. *Geographical Articles.* The geographical articles are differentiated from the historical by their essentially documentary nature. They have been conceived as veritable historico-monumental inventories, describing the evidence of art activity within specific areas from the remotest times to the present. In view of the nature of the treatment, a historical delimitation of areas seems less practical than that of modern political or administrative districts. As a rule, every geographic article corresponds to the territory of a sovereign state or of a confederation or union of states. In some cases, however, in politically fragmented areas, where division would be very difficult or where cultural homogeneity is evident, a single article may cover several political entities (for example, ARABIA; POLYNESIA). In certain other cases, vast regions geographically and historically defined, deprived at present of political sovereignty or contested between other states (e.g., TIBET); and recently associated states (e.g., EGYPT; SYRIA), have been treated in separate articles. Within the geographical articles, the description of the monuments and other works is usually divided into regions or provinces, with an alphabetical listing by cities or centers.

STRUCTURE OF THE ARTICLES. The length of the articles varies according to the importance and abundance of the material. It may be considerable for the history of the major art civilizations and general problems and for those territories in which monuments abound (for example, RENAISSANCE; ESTHETICS; ITALY). For certain biographical articles or limited aspects of the world of art or small countries (e.g., ALKAMENES; TAPA; MOZAMBIQUE) it may be quite brief. In each case, however, the article retains the structure of an organic monograph, with data, critical estimate, bibliography, etc.

The usual plan of articles of medium and major length includes the following parts: (a) a brief introduction, in large type after the heading; (b) the summary with chapter headings in Roman type and a reference to the opening column number, and subheads in italics; (c) the text in large type, divided into chapters (with titles in capital letters) and subsections (titles in italic); (d) lists and documentation where necessary in medium type, considered as chapters or subchapters and so listed in the summary; (e) the bibliography in small type, usually at the end of the article, but where it is specifically applicable to a single chapter or paragraph, following directly after the appropriate matter. The biographical articles, unless they concern groups of artists, have not usually been subdivided; however, after the account of an artist's life, there may follow in medium-sized type an outline list of his works, and lists of critical judgments and sources (the latter treated like bibliography and set in small type). In addition, there may be appendixes concerning the thought and possibly any extra-artistic activities of the subject. The geographical articles follow in their format the documentary and analytic nature of the treatise: except for the introduction, they are printed entirely in medium-sized type. They have more frequent subdivisions, presenting, within chapters and subchapters, lists of cities or sites where monuments are located. As a rule their bibliographies immediately follow the chapters, subchapters, and cities or sites.

The relation between the separate subjects is indicated by abundant cross-references to other articles (in small capitals, or with the simple notation "q.v.," if the word corresponding to the heading is mentioned in the text). In addition a considerable number of cross-reference entries have been introduced to facilitate reference to specialized topics treated under more general groupings or subject to variant titling (for example, "AKKAD. See ASIA, WEST: ANCIENT ART;" "ANATOMY. See HUMAN FIGURE. "). In every article, references are made at appropriate points to the plates and to figures within the text. Text illustrations are identified by the number of the column in which they appear. When reference is made to illustrations in another volume, the volume number in roman numerals precedes the plate or column number, which is arabic. The end of the article carries a note showing the numbers of accompanying illustrations.

In the inventories, documentation, and bibliographies, abbreviations have been extensively used for conciseness. A list of these abbreviations follows on page xvii. In the text proper, abbreviation has been avoided except for those in common usage, as in dates, measurements, etc.

At the end of each article or collaborative section, the author's name is given in full, with the surname in small capitals. Editorial text is indicated by a double asterisk (**). Unsigned lists and bibliographies are to be understood as editorially compiled. In some instances acknowledgment is made to collaborators for preparatory notes and specialized advice on individual brief parts of an article.

FORM OF PROPER NAMES. The difficulties inherent in rendering the historic and geographic proper names of ancient and foreign languages are always among the most serious in a work of synthesis which aspires both to soundness of documentation and ease of reading and understanding by a wide public. A rigid system allowing for no variants or exceptions (for example, the consistent Anglicizing of names or the use of the popular forms diffused throughout Western historico-geographic literature, especially by English-language writers, or on the other hand, completely methodical transliteration) would in the long run be counter to the requirements of individual cases. Therefore, as in most standard reference works in English, the various criteria of orthography and transliteration have been modified here, especially in text, to accept those forms occurring most frequently in the cultural tradition. Systematic forms of transliteration have been shown simultaneously with the popular forms where appropriate. In the geographical articles particularly and in the documentary and specialized portions of the text generally, a recapitulation of the names, past and present, popular and philological, has often been given where variation is marked. The same principle has been followed for the variants in names of artists or historical personages.

The following should be particularly noted:

(a) *In the headings*, the personal proper names (of artists) are followed, where necessary, by the variants, popular forms, and other appellations; the ethnic, historical, and geographic names appearing in the titles of articles follow, as a rule, the spelling of standard reference books in English, integrated with other forms in the text proper.

(b) *In the text*, normally, for ease in reading, the popularly accepted forms are given (e.g., Phidias, instead of Pheidias) provided the latter are authentic and sufficiently widespread (not, for example, in the case of Brygos, Lepaksi, etc.), but some leeway has been allowed for the preferences of individual authors. The same criteria have been adopted for the legends of the illustrations.

(c) *In the bibliographies*, the names of the authors and titles in non-Roman characters have been transliterated (except for those titles in Modern Greek). Transliterations of titles are provided generally for non-Roman languages.

(d) *In the geographic maps and diagrams*, the names are correlated to the forms adopted for the corresponding text. The ancient names are shown on maps of specific historical periods. For the over-all maps, accompanying the historical articles, the popularly accepted forms are preserved for obvious reasons of practicability and legibility.

ILLUSTRATIONS. With due regard to the content and arrangement of the work, these are selected and presented as a direct instrument of information integrated with the text. They are divided into:

(a) Figures in the text, consisting of geographic maps, plans, diagrams, perspective views, drawings of objects, ornaments, reconstructions and models of art works, etc., generally executed especially for the Encyclopedia.

(b) Plates apart from the text, placed at the end of each volume, with photographic reproductions in black and white and in color. Within the limits of adequate illustration of the topic, preference has been given to subjects that are not overly familiar in reproduction or have never been reproduced in print before and to original photographs taken especially for the Encyclopedia.

The legends contain full identification and location of the work, including as far as possible its material, medium or technique, and dimensions.

INDEX. The analytic index appearing in the fifteenth volume is designed to complete the work, summarizing the subject matter. It contains in one alphabetical list, for ease of consultation, all terminology pertaining to the concepts and objects and all historic, geographic, and personal names occurring in the text and plates, together with systematized cross-references, brief chronological and biographical data, nomenclature in the principal languages, and brief explanations of technical terms. It is planned thus to serve not only as an index but as a veritable dictionary, in many instances supplementing the information in the text with details too specialized for inclusion in the context of critical or historical monographs.

NOTES ON THE ENGLISH EDITION

Standards of Translation. Contributors to the Encyclopedia, drawn from the outstanding authorities of over 35 different countries, have written in many languages — Italian, Spanish, French, German, Russian, etc. To ensure faithful translation of the author's thought, all articles have been translated into English from the original language, checked for the accuracy of technical terms and accepted English forms of nomenclature by English and American art historians, and correlated with the final editorial work of the Italian edition for uniformity and coherence of the over-all presentation. Those articles written in English appear in the words and style of the authors, within the bounds of editorial attention to consistency and stylistic and organizational unity of the work as a whole. Article titles are in most cases parallel to those in the Italian edition, though occasionally they have been simplified, as *Dravidian Art* for *Dravidiche Correnti e Tradizioni*.

New Features. Although generally the English-language edition corresponds to the Italian version, a small number of purely editorial changes have been made in the interests of clear English-language alphabetization and occasional deletions or amplifications solely in the interests of clarity. Three major differences between the two editions do exist, however:

A considerable number of cross-references has been added in many places where it was felt that relating the subject under consideration to other pertinent articles would be of value to the reader.

A more extensive article on the Art of the Americas was projected for Volume One of the English edition with an entirely new text and many new plates in black and white and color. This article was designed to give the completest possible coverage within the existing space of some 100,000 words to a subject which, because of its interest to the English-speaking public, was entrusted to a group of well-known American scholars, each expert in his respective area.

Some 300 separate short biographies have been added to the English edition to provide ready access to data on the lives, works, and critical acceptance of certain artists identified with schools, movements, and broad categories of historical development that are treated in the longer monographic articles. These articles are unillustrated, but works of the artists are represented in the plates accompanying the longer articles.

Bibliographies. The bibliographies of the original Italian edition have been amplified at times to include titles of special interest to the English-speaking world and English-language editions of works originally published in other languages.

In undertaking these adaptations of the Italian text and preparing original material for the English edition, the publisher has been aided by the generous advice and, in many cases, collaboration of the members of the Editorial Advisory Committee.

ABBREVIATIONS

Museums, Galleries, Libraries, and Other Institutions

Antikensamml.	— Antikensammlungen
Antiq.	— Antiquarium
Bib. Nat.	— Bibliothèque Nationale
Bib. Naz.	— Biblioteca Nazionale
Brera	— Pinacoteca di Brera
Br. Mus.	— British Museum
Cab. Méd.	— Cabinet des Médailles (Paris, Bibliothèque Nationale)
Cleve. Mus.	— Cleveland Museum
Coll.	— Collection, Collezione, etc.
Conserv.	— Palazzo dei Conservatori
Gal.	— Galerie
Gall.	— Gallery, Galleria
Gall. Arte Mod.	— Galleria di Arte Moderna
IaMEO	— Istituto Italiano per il Medio ed Estremo Oriente
Kunstgewerbemus.	— Kunstgewerbemuseum
Kunsthist. Mus.	— Kunsthistorisches Museum
Louvre	— Musée du Louvre
Medagl.	— Medagliere
Met. Mus.	— Metropolitan Museum
Mus.	— Museum, Museo, Musée, Museen, etc.
Mus. Ant.	— Museo di Antichità
Mus. Arch.	— Museo Archeologico
Mus. B. A.	— Musée des Beaux-Arts
Mus. Cap.	— Musei Capitolini
Mus. Civ.	— Museo Civico
Mus. Com.	— Museo Comunale
Mus. Etn.	— Museo Etnologico
Mus. Naz.	— Museo Nazionale
Mus. Vat.	— Musei Vaticani
Nat. Gall.	— National Gallery
Öst. Gal.	— Österreichische Galerie
Pin.	— Pinacoteca
Pin. Naz.	— Pinacoteca Nazionale
Pin. Vat.	— Pinacoteca Vaticana
Prado	— Museo del Prado
Rijksmus.	— Rijksmuseum
Samml.	— Sammlung
Staat. Mus.	— Staatliche Museen
Staatsbib.	— Staatsbibliothek
Städt. Mus.	— Städtisches Museum
Tate Gall.	— Tate Gallery
Uffizi	— Uffizi Gallery
Vict. and Alb.	— Victoria and Albert Museum
Villa Giulia	— Museo di Villa Giulia

Reviews and Miscellanies

AAE	— Archivio per la Antropologia e la Etnologia, Florence
AAnz	— Archäologischer Anzeiger, Berlin
AAa	— Artibus Asiae, Ascona, Italy
AB	— Art Bulletin, New York
AbhAkMünchen	— Abhandlungen der Bayerischen Akademie der Wissenschaften, Munich
AbhBerlAk	— Abhandlungen der Berliner Akademie der Wissenschaften, Berlin
AbhPreussAk	— Abhandlungen der preussischen Akademie der Wissenschaften, Berlin

ABIA

AC
ActaA
ActaO
AD

AEA
AEArte
AErt
Afa
Afo
AfrIt
AJA
AM

AmA
AmAnt
AN
AnnInst

AnnSantEg

AntC
AntJ
AnzAlt

AnzÖAk

APAmM

AQ
ArndtBr

ARSI

ArtiFig
ASAtene

ASI
ASWI

AttiPontAcc

AZ
BA
BABach

BAC

BACBelg

BACr
BAFr

BAmSOR

BARte

BByzl

-- Annual Bibliography of Indian Archaeology, Leiden

— Archeonologia Classica, Rome
— Acta Archaeologica, Copenhagen
— Acta Orientalia, Leiden, The Hague
— Antike Denkmäler, Deutsches Archäologisches Institut, Berlin, Leipzig
— Archivo Español de Arqueología, Madrid
— Archivo Español de Arte, Madrid
— Archaeologiai Értesítő, Budapest
— Archiv für Anthropologie, Brunswick
— Archiv für Orientforschung, Berlin
— Africa Italiana, Bergamo
— American Journal of Archaeology, Baltimore
— Mitteilungen des deutschen archäologischen Instituts, Athenische Abteilung, Athens, Stuttgart

— American Anthropologist, Menasha, Wis.
— American Antiquity, Menasha, Wis.

— Art News, New York
— Annali dell'Istituto di Corrispondenza Archeologica, Rome

— Annales du Service des Antiquités de l'Égypte, Cairo

— L'Antiquité Classique, Louvain
— The Antiquaries Journal, London

— Anzeiger für die Altertumswissenschaft, Innsbruck, Vienna

— Anzeiger der Österreichischen Akademie der Wissenschaften, Vienna

— Anthropological Papers of the American Museum of Natural History, New York

— Art Quarterly, Detroit

— P. Arndt, F. Bruckmann, Griechische und römische Porträts, Munich, 1891 ff.

— Annual Report of the Smithsonian Institution, Bureau of Ethnology, Washington, D.C.

— Arti Figurative, Rome

— Annuario della Scuola Archeologica Italiana di Atene, Bergamo

— Archivio Storico Italiano, Florence

— Archaeological Survey of Western India, Hyderabad

— Arti della Pontificia Accademia Romana di Archeologia, Rome

— Archäologische Zeitung, Berlin

— Baesaler Archiv, Leipzig, Berlin

— Bulletin van de Vereeniging tot bevordering der kennis van de antieke Beschaving, The Hague

— Bulletin du Comité des Travaux Historiques et Scientifiques, Section d'Archéologie, Paris

— Bulletin de l'Académie Royale de Belgique, Cl. des Lettres, Brussels

— Bollettino di Archeologia Cristiana, Rome

— Bulletin de la Société Nationale des Antiquaires de France, Paris

— Bulletin of the American Schools of Oriental Research, South Hadley, Mass.

— Bollettino d'Arte del Ministero della Pubblica Istruzione, Rome

— The Bulletin of the Byzantine Institute, Paris

- BCH — Bulletin de Correspondance Hellénique, Paris
 BCom — Bollettino della Commissione Archeologica Comunale, Rome
 Beazley, ABV — J. D. Beazley, Attic Black-figure Vase-painters, Oxford, 1956
 Beazley, ARV — J. D. Beazley, Attic Red-figure Vase-painters, Oxford, 1942
 Beazley, EVP — J. D. Beazley, Etruscan Vase-painting, Oxford, 1947
 Beazley, VA — J. D. Beazley, Attic Red-figured Vases in American Museums, Cambridge, 1918
 Beazley, VRS — J. D. Beazley, Attische Vasenmaler des rotfigurigen Stils, Tübingen, 1925
 BEFEO — Bulletin de l'Ecole Française d'Extrême-Orient, Hanoi, Saigon, Paris
 BerlNZ — Berliner Numismatische Zeitschrift, Berlin
 Bernoulli, GI — J. J. Bernoulli, Griechische Ikonographie, Munich, 1901
 Bernoulli, RI — J. J. Bernoulli, Römische Ikonographie, I, Stuttgart, 1882; II, 1, Berlin, Stuttgart, 1886; II, 2, Stuttgart, Berlin, Leipzig, 1891; II, 3, Stuttgart, Berlin, Leipzig, 1894
 BHAcRoum — Bulletin Historique, Académie Roumaine, Bucharest
 BICR — Bollettino dell'Istituto Centrale del Restauro, Rome
 BIE — Bulletin de l'Institut de l'Egypte, Cairo
 BIFAN — Bulletin de l'Institut Français d'Afrique Noire, Dakar
 BIFAO — Bulletin de l'Institut Français d'Archéologie Orientale, Cairo
 BInst — Bollettino dell'Istituto di Corrispondenza Archeologica, Rome
 BJ — Bonner Jahrbücher, Bonn, Darmstadt
 BM — Burlington Magazine, London
 BMBeyrouth — Bulletin du Musée de Beyrouth, Beirut
 BMC — British Museum, Catalogue of Greek Coins, London
 BMCEmp — H. Mattingly, Coins of the Roman Empire in the British Museum, London
 BMFA — Museum of Fine Arts, Bulletin, Boston
 BMFEA — Museum of Far-Eastern Antiquities, Bulletin, Stockholm
 BMImp — Bollettino del Museo dell'Impero, Rome
 BMMA — Bulletin of the Metropolitan Museum of Art, New York
 BMQ — The British Museum Quarterly, London
 BPI — Bollettino di Paleologia Italiana, Rome
 BrBr — H. Brunn, F. Bruckmann, Denkmäler griechischer und römischer Skulptur, Munich
 Brunn, GGK — H. Brunn, Geschichte der griechischen Künstler, 2d ed., Stuttgart, 1889
 Brunn, GK — H. Brunn, Griechische Kunstgeschichte, Munich, I, 1893; II, 1897
 BSA — Annual of the British School at Athens, London
 BSEI — Bulletin de la Société des Etudes Indochinoises, Saigon
 BSOAS — Bulletin of the School of Oriental and African Studies, London
 BSPF — Bulletin de la Société Préhistorique Française, Paris
 BSR — Papers of the British School at Rome, London
 Cabrol-Leclercq — F. Cabrol, H. Leclercq, Dictionnaire d'archéologie chrétienne et de liturgie, Paris, 1907
 CAF — Congrès Archéologique de France, Paris, 1841-1935
 CahA — Cahiers Archéologiques, Fin de l'Antiquité et Moyen-Age, Paris
 CahArt — Cahiers d'art, Paris
 CAJ — Central Asiatic Journal, Wiesbaden
 CEFEQ — Cahiers de l'Ecole Française d'Extrême-Orient, Paris
 CIE — Corpus Inscriptionum Etruscarum, Lipsiae
 CIG — Corpus Inscriptionum Graecarum, Berolini
 CIL — Corpus Inscriptionum Latinarum, Berolini
 CIS — Corpus Inscriptionum Semiticarum, Paris
 Coh — H. Cohen, Description historique des Monnaies frappées sous l'Empire Romain, Paris
 Collignon, SG — M. Collignon, Histoire de la sculpture grecque, Paris, I, 1892; II, 1897
 Comm — Commentari, Florence, Rome
 Cr — La Critica, Bari
 CRAI — Comptes Rendus de l'Académie des Inscriptions et Belles-Lettres, Paris
 CrArte — La Critica d'Arte, Florence
 CVA — Corpus Vasorum Antiquorum
 DA — N. Daremberg, N. Saglio, Dictionnaire des antiquités grecques et romaines, Paris, 1877-1912
 Dehio, I-V — G. Dehio, Handbuch der deutschen Kunstdenkmäler, Berlin, I, Mitteldeutschland, 1927; II, Nordostdeutschland, 1926; III, Süddeutschland, 1933; IV, Südwestdeutschland, 1933; V, Nordwestdeutschland, 1928
 Dehio, DtK — G. Dehio, Geschichte der deutschen Kunst, 4 vols., Berlin, 1930-34
 Dehio-Von Bezold — G. Dehio, G. von Bezold, Die kirchliche Baukunst des Abendlandes, Stuttgart, 1892-1901
 DissPontAcc — Dissertazioni della Pontificia Accademia Romana di Archeologia, Rome
 EA — Photographische Einzelaufnahmen, Munich, 1893 ff.
 EAA — Enciclopedia dell'Arte Antica, Rome, I, 1958; II, 1959
 EArt — Eastern Art, London
 EB — Encyclopaedia Britannica
 EI — Enciclopedia Italiana, Rome, 1929 ff.
 EphDR — Ephemeris Dacoromana, Rome
 ESA — Eurasia Septentrionalis Antiqua, Helsinki
 Espér — E. Espérandieu, R. Lantier, Recueil général des Bas-Reliefs de la Gaule Romaine, Paris
 FA — Fasti Archaeologici, Florence
 FD — Fouilles de Delphes, Paris
 Friedländer — Max Friedländer, Altniederländische Malerei, Berlin, 1924-37
 Furtwängler, AG — A. Furtwängler, Antiken Gemmen, Leipzig, Berlin, 1900
 Furtwängler, BG — A. Furtwängler, Beschreibung der Glyptothek König Ludwig I zu München, Munich, 1900
 Furtwängler, KISchr — A. Furtwängler, Kleine Schriften, Munich, 1912
 Furtwängler, MP — A. Furtwängler, Masterpieces of Greek Sculpture, London, 1895
 Furtwängler, MW — A. Furtwängler, Meisterwerke der griechischen Plastik, Leipzig, Berlin, 1893
 Furtwängler-Reichhold — A. Furtwängler, K. Reichhold, Griechische Vasenmalerei, Munich
 GBA — Gazette des Beaux-Arts, Paris
 GJ — The Geographical Journal, London
 HA — Handbuch der Archäologie in Rahmen des Handbuchs der Altertumswissenschaft... herausgegeben von Walter Otto, Munich, 1939-53
 HBr — P. Herrmann, F. Bruckmann, Denkmäler der Malerei des Altertums, Munich, 1907
 Helbig-Amelung — W. Helbig, W. Amelung, E. Reisch, F. Weege, Führer durch die öffentlichen Sammlungen klassischer Altertümer in Rom, Leipzig, 1912-13
 HJAS — Harvard Journal of Asiatic Studies, Cambridge, Mass.
 Hoppin, Bf — J. C. Hoppin, A Handbook of Greek Black-figured Vases with a Chapter on the Red-figured Southern Italian Vases, Paris, 1924
 Hoppin, Rf — J. C. Hoppin, A Handbook of Attic Red-figured Vases Signed by or Attributed to the Various Masters of the Sixth and Fifth Centuries B.C., Cambridge, 1919
 HSAI — J. H. Steward, ed., Handbook of South American Indians, 6 vols., Bureau of American Ethnology, Bull. 143, Washington, D.C., 1946-50
 IAE — Internationales Archiv für Ethnographie, Leiden
 IBAI — Bulletin de l'Institut Archéologique Bulgare, Sofia
 IG — Inscriptiones Graecae, Berolini
 ILN — Illustrated London News, London
 IPEK — Ipek, Jahrbuch für prähistorische und ethnographische Kunst, Berlin
 JA — Journal Asiatique, Paris

- JAF — *Journal of American Folklore*, Lancaster, Pa.
 JAOS — *Journal of the American Oriental Society*, Baltimore
 JAS — *Journal of the African Society*, London
 JBORS — *Journal of the Bihar and Orissa Research Society*, Patna, India
 JdI — *Jahrbuch des deutschen archäologischen Instituts*, Berlin
 JEA — *Journal of Egyptian Archaeology*, London
 JhbKhSammlWien — *Jahrbuch der kunsthistorischen Sammlungen in Wien*, Vienna
 JhbPreussKSammI — *Jahrbuch der preussischen Kunstsammlungen*, Berlin
 JHS — *Journal of Hellenic Studies*, London
 JIAI — *Journal of Indian Art and Industry*, London
 JIAN — *Journal International d'Archéologie Numismatique*, Athens
 JISOA — *Journal of the India Society of Oriental Art*, Calcutta
 JNES — *Journal of Near Eastern Studies*, Chicago
 JPS — *Journal of the Polynesian Society*, Wellington, New Zealand
 JRAI — *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, London
 JRAS — *Journal of the Royal Asiatic Society*, London
 JRS — *Journal of Roman Studies*, London
 JS — *Journal des Savants*, Paris
 JSA — *Journal de la Société des Africanistes*, Paris
 JSAH — *Journal of the Society of Architectural Historians*, Charlottesville, Va.
 JSAm — *Journal de la Société des Americanistes*, Paris
 JSO — *Journal de la Société des Océanistes*, Paris
 Klein, GrK — W. Klein, *Geschichte der griechischen Kunst*, Leipzig, 1904-07
 KS — *Communications on the Reports and Field Research of the Institute of Material Culture*, Moscow, Leningrad
 Lippold, GP — G. Lippold, *Die griechische Plastik* (W. Otto, *Handbuch der Archäologie*, III, 1), Munich, 1950
 Löwy, IGB — E. Löwy, *Inschriften griechischer Bildhauer*, Leipzig, 1885
 MAAccIt — *Monumenti Antichi dell'Accademia d'Italia*, Milan
 MAARome — *Memoirs of the American Academy in Rome*, Rome, New York
 MAF — *Mémoires de la Société Nationale des Antiquaires de France*, Paris
 MAGWien — *Mitteilungen der anthropologischen Gesellschaft in Wien*, Vienna
 Mâle, I — E. Mâle, *L'art religieux du XII^e siècle en France*, Paris, 1928
 Mâle, II — E. Mâle, *L'art religieux du XIII^e siècle en France*, Paris, 1925
 Mâle, III — E. Mâle, *L'art religieux de la fin du moyen-âge en France*, Paris, 1925
 Mâle, IV — E. Mâle, *L'art religieux après le Concile de Trente*, Paris, 1932
 MALinc — *Monumenti Antichi dell'Accademia dei Lincei*, Milan, Rome
 Mattingly-Sydenham — H. Mattingly, E. Sydenham, C. H. V. Sutherland, *The Roman Imperial Coinage*, London
 MdI — *Mitteilungen des deutschen archäologischen Instituts*, Munich
 MdIK — *Mitteilungen des deutschen Instituts für ägyptische Altertumskunde in Kairo*, Wiesbaden
 MéI — *Mélanges d'Archéologie et d'Histoire* (Ecole Française de Rome), Paris
 MemLinc — *Memorie dell'Accademia dei Lincei*, Rome
 MGH — *Monumenta Germaniae Historica*, Berlin
 MIA — *Material and Research in Archaeology of the U.S.S.R.*, Moscow, Leningrad
 Michel — A. Michel, *Histoire de l'art depuis les premiers temps chrétiens jusqu'à nos jours*, Paris, 1905-29
 MInst — *Monumenti dell'Istituto di Corrispondenza Archeologica*, Rome
 MJhb — *Münchner Jahrbuch der bildenden Kunst*, Munich
 MLJ — *Modern Language Journal*, St. Louis, Mo.
 MnbKw — *Monatsberichte über Kunstwissenschaft*
 MPA — *Monumenti della pittura antica scoperti in Italia*, Rome
 MPiot — *Fondation Eugène Piot, Monuments et Mémoires*, Paris
 MPontAcc — *Memorie della Pontificia Accademia Romana di Archeologia*, Rome
 NBACr — *Nuovo Bollettino di Archeologia Cristiana*, Rome
 NChr — *Numismatic Chronicle and Journal of the Royal Numismatic Society*, London
 NIFAN — *Notes de l'Institut Français d'Afrique Noire*, Dakar
 NR — *Numismatic Review*, New York
 NSc — *Notizie degli Scavi di Antichità*, Rome
 NZ — *Numismatische Zeitschrift*, Vienna
 OAZ — *Ostasiatische Zeitschrift*, Vienna
 ÖJh — *Jahreshefte des Österreichischen archäologischen Instituts*, Vienna
 ÖKT — *Österreichische Kunstopographie*, Vienna
 OMLeiden — *Oudheidkundige Mededeelingen van het Rijksmuseum van Oudheden te Leiden*, Leiden
 OpA — *Opuscula Archaeologica*, Lund
 Overbeck, SQ — J. Overbeck, *Die antiken Schriftquellen zur Geschichte der bildenden Künste bei den Griechen*, Leipzig, 1869
 PEQ — *Palestine Exploration Quarterly*, London
 Perrot-Chipiez — G. Perrot, C. Chipiez, *Histoire de l'art dans l'Antiquité*, Paris, I, 1882; II, 1884; III, 1885; IV, 1887; V, 1890; VI, 1894; VII, 1898; VIII, 1903; IX, 1911
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 PSI — *Pubblicazioni della Società Italiana per la ricerca dei papiri greci e latini in Egitto*, Florence, 1912 ff.
 QCcr — *Quaderni della Critica*, Bari
 RA — *Revue Archéologique*, Paris
 RAA — *Revue des Arts Asiatiques*, Paris
 RACr — *Rivista di Archeologia Cristiana*, Rome
 RArte — *Rivista d'Arte*, Florence
 RArts — *Revue des arts*, Paris
 RBib — *Revue Biblique*, Paris
 RDK — *Reallexikon zur deutschen Kunstgeschichte*, Stuttgart, 1937 ff.
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 REL — *Revue des Etudes Latines*, Paris
 RendAccIt — *Rendiconti della R. Accademia d'Italia*, Rome
 RendLinc — *Rendiconti dell'Accademia dei Lincei*, Rome
 RendNapoli — *Rendiconti dell'Accademia di Archeologia di Napoli*, Naples

RendPontAcc	— Rendiconti della Pontificia Accademia Romana di Archeologia, Rome
RepfKw	— Repertorium für Kunstwissenschaft, Berlin, Stuttgart
REthn	— Revue d'Ethnographie, Paris
RhMus	— Rheinisches Museum für Philologie, Frankfurt on the Main
RIASA	— Rivista dell'Istituto d'Archeologia e Storia dell'Arte, Rome
RIN	— Rivista Italiana di Numismatica, Rome
RIDKg	— Reallexicon zur deutschen Kunstgeschichte, Stuttgart, 1937
RLV	— M. Ebert, Real-Lexikon der Vorgeschichte, Berlin, 1924-32
RM	— Mitteilungen des deutschen archäologischen Instituts, Römische Abteilung, Berlin
RN	— Revue Numismatique, Paris
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RQ	— Römische Quartalschrift, Freiburg
RScPr	— Rivista di Scienze Preistoriche, Florence
RSLig	— Rivista di Studi Liguri, Bordighera, Italy
RSO	— Rivista degli Studi Orientali, Rome
Rumpf, MZ	— A. Rumpf, Malerei und Zeichnung (W. Otto, Handbuch der Archäologie, IV, 1), Munich, 1953
SA	— Soviet Archaeology, Moscow, Leningrad
SbBerlin	— Sitzungsberichte der preussischen Akademie der Wissenschaften, Berlin
SbHeidelberg	— Sitzungsberichte der Akademie der Wissenschaften zu Heidelberg, Heidelberg
SbMünchen	— Sitzungsberichte der bayerischen Akademie der Wissenschaften zu München, Munich
SbWien	— Sitzungsberichte der Akademie der Wissenschaften in Wien, Vienna
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SEtr	— Studi Etruschi, Florence
SNR	— Sudan Notes and Records, Khartoum
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SymbOsl	— Symbolae Osloenses, Oslo
ThB	— U. Thieme, F. Becker, Künstler Lexikon, Leipzig, 1907-50
TitAM	— Tituli Asiae Minoris, Vindobonae, 1901-44
TNR	— Tanganyika Notes and Records, Dar-es-Salaam
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VFPA	— Viking Fund Publications in Anthropology, New York
Vollmer	— H. Vollmer, Allgemeines Lexikon der bildenden Künstler des XX. Jahrhunderts, Leipzig, 1953
Warburg	— Journal of the Warburg and Courtauld Institutes, London
Wpr	— Winckelmannsprogramm, Berlin
WürzbJ	— Würzburger Jahrbücher für die Altertumswissenschaft, Würzburg
ZsS	— Zeitschrift für ägyptische Sprache und Altertumskunde, Berlin, Leipzig
ZfAssyr	— Zeitschrift für Assyriologie, Strasbourg
ZfBk	— Zeitschrift für bildende Kunst, Leipzig
ZfE	— Zeitschrift für Ethnologie, Berlin
ZfKg	— Zeitschrift für Kunstgeschichte, Munich
ZfKw	— Zeitschrift für Kunstwissenschaft, Munich
ZfN	— Zeitschrift für Numismatik, Berlin
ZfSAKg	— Zeitschrift für schweizerische Archäologie und Kunstgeschichte, Basel
ZMG	— Zeitschrift der morgenländischen Gesellschaft, Leipzig

Languages and Ethnological Descriptions

Alb.	— Albanian
Am.	— American
Ang.	— Anglice, Anglicized
Ar.	— Arabic
Arm.	— Armenian
Bab.	— Babylonian
Br.	— British
Bulg.	— Bulgarian
Chin.	— Chinese
D.	— Dutch
Dan.	— Danish
Eg.	— Egyptian
Eng.	— English
Finn.	— Finnish
Fr.	— French
Ger.	— German
Gr.	— Greek
Heb.	— Hebrew
Hung.	— Hungarian
It.	— Italian
Jap.	— Japanese
Jav.	— Javanese
Lat.	— Latin
Mod. Gr.	— Modern Greek
Nor.	— Norwegian
Per.	— Persian
Pol.	— Polish
Port.	— Portuguese
Rum.	— Rumanian
Rus.	— Russian
Skr.	— Sanskrit
Sp.	— Spanish
Swed.	— Swedish
Yugo.	— Yugoslav

Other Abbreviations (Standard abbreviations in common usage are omitted.)

Abh.	— Abhandlungen
Acad.	— Academy, Académie
Acc.	— Accademia
Adm.	— Administration
Ak.	— Akademie
Allg.	— Allgemein
Alm.	— Almanacco
Am.	— America, American, etc.
Amm.	— Amministrazione
Ann.	— Annale, Annali, Annuario, Annual, etc.
Ant.	— Antiquity, Antico, Antiquaire, etc.
Anthr.	— Anthropology, etc.
Antr.	— Antropologia, etc.
Anz.	— Anzeiger
Arch.	— Architecture, Architettura, Architetonico, etc.; Archives
Archaeol.	— Archaeology, etc.
attrib.	— attributed
Aufl.	— Auflage
Aufn.	— Aufnahme
B.	— Bulletin, Bollettino, etc.
b.	— born
Belg.	— Belgian, Belga, etc.
Berl.	— Berlin, Berliner
Bern.	— Berner
Bib.	— Bible, Biblical, Bibliothèque, etc.
Bibliog.	— Bibliography, etc.
Br.	— British
Bur.	— Bureau
Byz.	— Byzantine
C.	— Corpus
ca.	— circa
Cah.	— Cahiers
Cal.	— Calendar
Cap.	— Capital, Capitolium
Cat.	— Catalogue, Catalogo, etc.
Chr.	— Chronicle, Chronik
Civ.	— Civiltà, Civilization, etc.
cod.	— codex
col., cols.	— column, columns
Coll.	— Collection, Collana, Collationes, Collectanea, Collezione, etc.

Comm.	— Commentaries, Commentari, Communica- tions, etc.	Mon.	— Monuments, Monumento
Cong.	— Congress, Congresso, etc.	Münch.	— München, Münchner
Cr.	— Critica	Mus.	— Museum, Museo, etc.
Cron.	— Cronaca	N.	— New, Notizia, etc.
Cuad.	— Cuadernos	Nachr.	— Nachrichten
Cult.	— Culture, Cultura, etc.	Nat.	— National, etc.
D.	— Deutsch	Naz.	— Nazionale
d.	— died	Notit. dign.	— Notitia Dignitatum
Diss.	— Dissertation, Dissertazione	N. S.	— new series
Doc.	— Documents, etc.	O.	— Oriental, Orient, etc.
E.	— Encyclopedia, etc.	Ö.	— Österreichische
Eccl.	— Ecclesiastic, Ecclesia, etc.	obv.	— obverse
Eng.	— English, England	öffentl.	— öffentlich
Ep.	— Epigraphy	Op.	— Opuscolo
Esp.	— España, Español	Pap.	— Papers
Eat.	— Estudios	per.	— period
Et.	— Etudes	Per.	— Periodical, Periodico
Ethn.	— Ethnology, Ethnography, Ethnographie, etc.	Pin.	— Pinacoteca
Etn.	— Etnico, Etnografía, etc.	Pr.	— Prehistory, Preistoria, Preystori, Préhistoire
Etnol.	— Etnologia	Proc.	— Proceedings
Eur.	— Europe, Europa, etc.	Pub.	— Publication, Publicación
ext.	— extract	Pubbl.	— Pubblicazione
f.	— für	Q.	— Quarterly, Quaderno
fasc.	— fascicle	Quel.	— Quellen
Fil.	— Filologia	R.	— Rivista
Filos.	— Filosofia, Filosofico	r	— recto
fol.	— folio	Racc.	— Raccolta
Forsch.	— Forschung, Forschungen	Rass.	— Rassegna
Fr.	— French, Francia, Français, etc.	Rec.	— Recueil
Gal.	— Galerie	Recens.	— Recensione
Gall.	— Gallery, Galleria	Rech.	— Recherches
Geog.	— Geography, Geografia, Geographical, etc.	Rel.	— Relazione
Ger.	— German, Germania, etc.	Rend.	— Rendiconti
Giorn.	— Giornale	Rép.	— Répertoire
H.	— History, Histoire, etc.	Rep.	— Report, Repertorio, Repertorium
hl.	— heilig, heilige	Rev.	— Review, Revue, etc.
Holl.	— Hollandisch, etc.	RI.	— Reallexicon
Hum.	— Humanity, Humana, etc.	Rom.	— Roman, Romano, Romanico, etc.
I.	— Istituto	Rus.	— Russia, Russian, Russie, Russo, etc.
Ill.	— Illustration, Illustrato, Illustrazione, etc.	rv.	— reverse
Ind.	— Index, Indice, Indicatore, etc.	S.	— San, Santo, Santa (saint)
Inf.	— Information, Informazione, etc.	S.	— Studi, Studies, etc.
Inat.	— Institute, Institut, etc.	Samml.	— Sammlung, Sammlungen
Int.	— International, etc.	Sc.	— Science, Scienza, Scientific, etc.
Ist.	— Istituto	Schr.	— Schriften
It.	— Italian, Italy, etc.	Schw.	— Schweitzer
J.	— Journal	Script	— Scriptorium
Jb.	— Jaarboek	Sitzb.	— Sitzungsberichte
Jhb.	— Jahrbuch	s.l.	— in its place
Jhrb.	— Jahreshäfte	Soc.	— Social, Society, Società, Sociale, etc.
	— Kunst	Spec.	— Speculum
	— Katalog	SS.	— Saints, Sante, Santi, Santissima
	— Kunstchronik	St.	— Saint
	— Kunstgeschichte	Sta	— Santa (holy)
	— Kunsthistorische	Ste	— Sainte
	— Kunstwissenschaft	Sto	— Santo (holy)
	— Latin	Sup.	— Supplement, Supplemento
	— Letteratura, Lettere	s.v.	— under the word
	— Library	Tech.	— Technical, Technology, etc.
ling.	— linguistica, lingua, etc.	Tecn.	— Tecnica, Tecnico
Lit.	— Literary, Literarische, Littéraire, etc.	Tr.	— Transactions
Mag.	— Magazine	trans.	— translator, translated, etc.
Med.	— Medieval, Medievale, etc.	Trav.	— Travaux
Meded.	— Mededeelingen	u.	— und
Mél.	— Mélanges	Um.	— Umanesimo
Mém.	— Mémoire	Univ.	— University, Università, Université, etc.
Mem.	— Memorie, Memoirs	Urb.	— Urban, Urbanistica
Min.	— Minerva	v	— verso
Misc.	— Miscellanea, etc.	VAT	— Vorderasiatische Tafeln
Mit.	— Mitteilungen	Verh.	— Verhandlungen, Verhandelingen
Mnb.	— Monatsberichte	Verz.	— Verzeichnis
Mnbl.	— Monatsblätter	Vf.	— Verfasser
Mnh.	— Monatshefte	Wien.	— Wiener
Mod.	— Modern, Moderno, etc.	Yb.	— Yearbook
		Z.	— Zeitschrift, Zeitung, etc.

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 TORONTO, Coll. Charles S. Band
 TUNIS, Bardo
 TURIN, Biblioteca Nazionale
 TURIN, Museo Civico

URBANA, Ill., University of Illinois
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 VIENNA, Albertina
 VIENNA, Kniger Coll.
 VIENNA, Kunsthistorisches Museum

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 WASHINGTON, D.C., Library of Congress, Print Coll.
 WASHINGTON, D.C., National Gallery of Art
 WASHINGTON, D.C., Phillips Coll.
 WASHINGTON, D.C., Smithsonian Institution, National Collection of Fine Arts
 WICHITA, Kans., Art Museum
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 ZURICH, Rietberg Museum

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AERO-PHOTO, Paris: 390 (4,6); 391 (1,2)
 ALINARI, Florence: 53 (1); 231; 232; 242 (2); 257; 260; 268; 292 (1); 297 (3,4); 306 (1-4); 307 (3); 350 (3); 380 (6-8); 381 (1-6); 382 (1,3); 386 (5); 390 (3); 399 (1,4); 409 (1,4,5); 410 (5); 440 (4); 443 (3); 448 (3); 451 (3); 454 (1-3); 455 (1-4); 456; 457; 459 (2); 461; 462; 463 (1); 506; 515 (1)
 ANDERSON, Rome: 53 (3); 55; 70; 249; 250; 251; 252; 259; 292 (2); 302 (1,3); 305 (1); 307 (2,4); 308 (2); 310; 380 (4,5); 386 (2,4); 396 (2); 458; 463 (2)
 ANDOVER ART STUDIO, Andover, Mass.: 106 (1); 109 (1)
 ANDREWS, WAYNE, New York: 77 (2); 82 (2,3); 85 (2-4); 88 (4); 92 (1); 141 (1)
 ARCHIVES PHOTOGRAPHIQUES, Paris: 307 (5); 473 (1,2); 502 (2,3); 512 (2); 519 (1,2); 526 (2,5)

ARCHIVIO FOTOGRAFICO, GALLERIE MUSEI VATICANI, Vatican City: 270 (1,2); 300 (2)
 ARTE E COLORE, Milan: 263; 266; 271; 363; 364; 374; 394 (3); 447 (2); 448 (2); 450 (4-6); 451 (1,2,4); 453 (2,3); 467 (3)
 ASK, GILBERT: 133 (1)
 BAKER, OLIVER, New York: 116 (2); 124 (4); 127 (3); 130 (4,6); 132 (5); 138 (5)
 BARROWS, G., New York: 135 (1)
 BATEY, CHARLES, Oxford: 45; 47
 BAYERISCHES NATIONALMUSEUM, Munich: 441 (2); 442 (1)
 BAYERISCHES STAATSGEMÄLDESAMMLUNG, Munich: 313 (1)
 BERGHAUS, Munich: 63; 64
 BIBLIOTHÈQUE NATIONALE, Paris: 274; 304 (1); 338

- BILDARCHIV FOTO MARBURG, Marburg: 170; 179; 185; 193 (4); 194 (4); 195 (2); 305 (2); 334 (3); 370; 378 (1); 387 (2); 398 (1); 413 (1); 416 (3,4); 437 (5); 467 (6); 508
- BOVIS, Paris: 18 (1,2); 24; 29
- BRAUNMÜLLER, Munich: 171 (1,2); 181; 182; 184; 204; 219
- BRITISH MUSEUM, London: 289 (4,9); 290 (3); 291 (4); 505 (1); 510
- BROGI, Florence: 58 (1); 229; 233 (1,2); 258; 305 (5); 322 (4); 406 (2,4); 440 (3); 453 (1), 460
- BROSMITH, BERT: 92 (3)
- BUCHBINDER, Chicago: 33 (1,2); 34 (1-3); 35; 36; 37; 39 (1,3)
- CALZOLARI, Mantua: 56 (1,3); 57; 58 (3)
- CAROLINA ART ASSOCIATION, GIBBES ART GALLERY, Charleston, S.C.: 75 (1)
- CHAMBI, Cuzco, Peru: 147 (1,2); 148 (1-4); 149 (1,2); 150 (1,2); 151; 152 (1-3); 153; 154 (1,2); 156 (1,2); 157 (1,2); 158 (1,2); 168 (2); 169 (1,2); 413 (3)
- CHAPPEL STUDIO, Philadelphia: 128 (2)
- CHREVOJON: 305 (6)
- CHICAGO ARCHITECTURAL PHOTOGRAPHING CO., Chicago: 84 (2); 86 (1,4); 87
- CIACCHI, Florence: 282 (1)
- COLUMBIA UNIVERSITY, New York: 91 (1)
- COURLANDER, HAROLD, New York: 38 (1); 39 (2)
- COVELL, WILLIAM KING: 76 (1)
- CROCI, Bologna: 293; 294; 295 (1,2)
- CURRIE: 165 (1)
- CUSHING, G. M., Boston: 96 (2)
- DA CRUZ, J. M., Brooklyn, N.Y.: 143 (1,3)
- DARTMOUTH COLLEGE, Hanover, N.H.: 145 (1)
- DE ANTONIS, Rome: 59 (1); 71; 72; 176; 178 (1), 180; 186 (1-4); 188 (1-5); 189; 190; 194 (1-3); 202 (1,2); 216; 300 (1,3); 308 (3); 336; 337; 342 (1); 344; 345; 347; 351; 352; 361; 413 (2); 436 (3,4,6-8); 437 (1,3,4); 438 (1); 465; 483; 484; 485; 486; 498 (3)
- DE LIBERALI: 20; 22; 23 (1-3); 414 (1)
- DEPARTMENT OF GOVERNMENT ARCHAEOLOGY IN INDIA, New Delhi: 220 (1,2); 226 (2); 227; 454 (4)
- DEUTSCHES ARCHÄOLOGISCHES INSTITUT, Athens: 340 (3); 343 (1); 350 (3); 367; 438 (2)
- DEUTSCHES ARCHÄOLOGISCHES INSTITUT, Rome: 301 (2); 343 (3)
- DEUTSCHE PHOTOTHEK, Dresden: 316
- DOWNTOWN GALLERY, New York: 116 (3); 130 (8)
- DURLOCHER BROS., New York: 127 (2)
- EAMES, CHARLES: 135 (5)
- EHEMALS, STAATLICHE MUSEEN, Berlin: 60, 66
- ELISOFON, ELIOT, New York: 93 (1)
- EMI., Athens: 348 (2)
- EZRA STOLLER PHOTOGRAPHS, Rye, N.Y.: 83 (2); 92 (2); 93 (3)
- FERRUZZI, Venice: 410 (4)
- FLEMING, London: 247
- FLOURNOY, ROBERT K., Richmond, Va.: 74 (2,3)
- FOTO AERONAUTICA, Rome: 395 (2)
- FOTOCELERE, Turin: 52 (1); 386 (3); 400 (5); 402 (2)
- FOTOCIELO, Rome: 384 (1); 389 (1); 390 (1); 393 (3); 401 (2); 402 (3); 404 (4)
- FRANCESCHI, Aulnay-sous-Bois: 354 (1,2)
- FRANTZ, ALISON, Athens: 346 (1); 358
- FÜRER-HAIMENDORF, C. von, London: 491 (1-3); 494 (4); 495 (1-4); 496 (2)
- GABINETTO FOTOGRAFICO MUNICIPALE, Messina: 314 (1); 315
- GABINETTO FOTOGRAFICO, MUSEO CIVICO, Padua: 68; 73
- GABINETTO FOTOGRAFICO NAZIONALE, Rome: 173 (1-3); 242 (1); 302 (2); 403 (1,2); 406 (3,5)
- GABINETTO FOTOGRAFICO, SOPRINTENDENZA ALLE GALLERIE DI FIRENZE: 230 (1-4); 234 (1); 236; 243; 244; 245; 246; 255; 256; 261 (1,2); 262; 267; 269 (1,2); 407 (1-3); 459 (1); 464
- GARRISON, New York: 93 (2)
- GENERAL SERVICES ADMINISTRATION, Washington, D.C.: 79 (2)
- GEORGE MILES RYAN STUDIOS, INC., Minneapolis: 95 (2)
- GIACOMELLI, Venice: 410 (3)
- GIRAUDON, Paris: 7; 8; 28; 174 (2); 206; 207; 217; 273; 342 (2); 385 (1,2); 387 (1); 392 (4); 393 (1); 398 (2); 502 (1); 503; 504; 507; 511; 512 (1); 513; 514 (2); 515 (2); 525
- GOTTSCHO-SCHLEISNER, Jamaica, N.Y.: 130 (1)
- GRIFFIN, Toronto: 137 (5)
- GUILLÉN, Lima: 159; 160 (1); 161 (1-3); 162 (1,2); 163 (1,2); 164; 166 (1-4); 167; 172 (1-4); 178 (3,4); 183; 187; 191; 192; 193 (1-3); 196; 197 (1,2); 198; 200 (1,2); 201 (2); 202 (3,4); 203 (1-4); 215 (1-4)
- HEDRICH-BLESSING, Chicago: 86 (2); 91 (1)
- HEFFREN, JOHN H., Lenoir, N.C.: 89 (3)
- HERVI, Neuilly-sur-Seine: 381 (8); 387 (3); 424 (6)
- HIRMER, Munich: 329 (1); 330 (8); 331; 332 (1,2); 346 (2); 350 (2); 369; 372 (1); 373; 379 (1-4); 380 (1,2); 392 (1,2); 396 (4); 397 (1); 400 (1); 409 (3,6); 413 (4); 414 (3); 415 (1); 514 (1); 516 (1,2); 517 (1-4); 518; 521; 522 (1,2); 523 (1,2); 524; 530 (1); 535
- THE HISTORICAL SOCIETY OF PENNSYLVANIA, Philadelphia: 77 (3); 80 (3)
- HOSMANN: 155
- INDIAN MUSEUM, Calcutta: 226 (1)
- IRAQ MUSEUM, Baghdad: 5; 6 (1-3); 11; 12 (1,2), 13
- ISTITUTO CENTRALE RESTAURO, Rome: 313 (3); 314 (2); 321; 368 (3)
- ISTITUTO PATOLOGIA DEL LIBRO, Rome: 283 (3)
- JACQUES SELIGMANN GALLERIES, New York: 124 (5)
- JULEY, PETER A. & SON, New York: 130 (5,8)
- KAUFMANN, Munich: 350 (1); 371
- KILLY POWELL, Chicago: 124 (1)
- KLEFMAN GALLERIES, New York: 110 (5)
- KOOTZ GALLERY, New York: 127 (4)
- KUNSTGEWERBEMUSEUM, Zurich: 467 (5)
- LANG, ERWIN: 415 (4)
- LARCO HOYLE, R., Trujillo: 175 (2)
- LAROUSSE, Paris: 439 (3)
- LENSMEN: 283 (1,2); 284 (1-4)
- LESLIE, DR. ROBERT L., New York: 114 (2)
- LIBRARY OF CONGRESS, Washington, D.C.: 74 (1-4); 75 (2); 76 (2); 77 (1,2); 80 (1); 81 (1); 82 (1); 140 (1)
- LICHTBILDWERKSTÄTTE ALPENLAND, Vienna: 318
- LIFE MAGAZINE, New York: 93 (1)
- MAS, Barcelona: 372 (3)
- McKENNA, ROLLIE, New York: 141 (2); 142 (3)
- MENZIES, ELIZABETH, Princeton, N.J.: 88 (3)
- MERRILL, STEPHEN, Brunswick, Me.: 98 (4)
- MEYER, KARI, Vienna: 61
- MILLER, W. F. & C., Hartford, Conn.: 146 (1)
- MILLS, Philadelphia: 320
- MONCALVO, Turin: 389 (2)
- MORSCHER: 282 (3,4)
- MUSÉE GUIMET, Paris: 471; 472; 474; 478; 479; 480; 482; 488 (2); 489; 490
- MUSEO DELLA CIVILTÀ ROMANA, Rome: 324
- MUSEUM OF THE CITY OF NEW YORK: 82 (4)
- MUSEUM OF MODERN ART, New York: 82 (2); 90 (2); 91 (2)
- MYERS, BERNARD S., New York: 145 (1-3)
- NATIONAL PARK SERVICE, Washington, D.C.: 88 (2)
- NEW YORK PUBLIC LIBRARY, New York: 114 (1,3)
- NICHOLS, FREDERICK D., Charlottesville, Va.: 80 (1)
- OFFICE OF THE ARCHITECT OF THE CAPITOL, Washington, D.C.: 79 (1)
- OMNIA FOTO, Ravenna: 384 (3)
- PHILIP JOHNSON ASSOCIATES, New York: 95 (3)

PHOTOGRAPHERS ASSOCIATED, Omaha, Nebr.: 122 (2)
 POZZI BELLINI, Rome: 326 (1,2); 327 (1,2)

REAL PHOTO: 396 (1)

RENSI, Trent: 410 (2)

RIGOIRE, Marseilles: 330 (7)

ROOS, Helsinki: 2 (1)

ROSENBERG: 393 (5)

ROSTAMY, Tehran: 404 (1)

ROSZAK, THEODORE J., New York: 131 (7)

ROTAFOTO: 390 (5)

ROWE, ABBIE, Washington, D.C.: 79 (2)

SAVIO, OSCAR, Rome: 212 (1,2); 283 (4); 299 (2); 323 (1,2);
 359; 376; 394 (2); 397 (2); 401 (1); 405 (1-6); 410 (6); 436 (1)

SCALA, Florence: 50; 62; 228; 237; 238; 240; 248; 253; 254;
 264; 272; 319; 411; 429; 430; 431; 432

SCHAEFFER, J. H. & SON, Baltimore, Md.: 81 (2); 116 (1);
 124 (2)

SCHECHESTER, A. A. ASSOCIATES, New York: 95 (3)

SCHIFF, JOHN D., New York: 131 (1)

SCHWENK, Vienna: 441 (1); 443 (1); 444 (1-3); 445 (1,2); 446
 (1-4); 447 (1,3); 448 (1); 449; 450 (3); 452; 453 (4)

SCUOLA ARCHEOLOGICA ITALIANA, Athens: 438 (4)

SENDER: 400 (2)

SINGH, MADANJEET, Vientiane: 40; 41; 42; 43; 44; 46; 48 (1-4); 49
 SMITH, New York: 393 (2)

SMITHSONIAN INSTITUTION, Washington, D.C.: 9; 10

SOCIETY FOR THE PRESERVATION OF NEW ENGLAND ANTIQUITIES,
 Boston: 80 (2); 84 (1)

SOPRINTENDENZA ALLE ANTICHITÀ, Salerno: 333

STAATLICHE MUSEEN, Berlin: 438 (3)

STEINKOPF, Berlin: 65; 241

STOLZ: 325 (1-4); 327 (3,4); 329 (2,3); 330 (3)

SUNAMI, SOICHI, New York: 121 (1); 122 (4); 127 (1); 130 (2,7);
 131 (3-5)

TAYLOR, WILL F.: 290 (5)

THOMAS AIRVIEWS, Bayside, N.Y.: 95 (1)

TOMBAZI, Athens: 339; 340 (2); 437 (2)

TOSI, Parma: 414 (2)

UHT, CHARLES, Utica, N.Y.: 105 (2)

VALOKUVA OY, Kolmio, Finland: 3

WALLACE, PHILIP B., Philadelphia: 80 (3)

WELLS: 423 (3)

ZERKOWITZ: 467 (4)

CONTENTS - VOLUME I

	<i>Col.</i>	<i>Pls.</i>		<i>Col.</i>	<i>Pls.</i>
AALTO, Hugo Alvar Henrik	1	1-3	ANDREA DA PONTEDERA	420	228-233
AMBASSADE ART	5	4-13	ANDREA DEL CASTAGNO	424	234-246
'ABDU 'q-ŞAMAD	16	14-17	ANDREA DEL SARTO	431	247-259
ACOUSTICS	20		ANGELICO, Frate Giovanni	437	260-273
ADAM, Robert and James	31		ANGLO-SAXON and IRISH ART	446	274-291
AERTSEN, Pieter	32		ANGOLA	463	
AFGHANISTAN	32		ANTELAMI, Benedetto	466	292-297
AFRICA, BRITISH EAST	47		ANTILLES	473	
AFRICA, FRENCH EQUATORIAL	51		ANTIQUE REVIVAL	478	298-309
AFRICA, FRENCH WEST	55		ANTONELLO DA MESSINA	501	310-321
AFRICA, NORTH	62		APELLES	509	322
AFRICAN CULTURES	130		APOLLODOROS OF DAMASCUS	511	323-324
AFRICAN-ROMAN ART	141	18-29	ARABIA	514	
AFRO-AMERICAN ART	150	30-39	ARABIAN PRE-ISLAMIC ART	537	325-330
AGOSTINO DI DUCCIO	158		ARCHAEOLOGY: RESEARCH AND DIS- COVERIES	561	
AJANTA	150	40-49	ARCHAIC ART	578	331-375
ALASKA	179		ARCHITECTURE	625	376-424
ALBANIA	182		ARGENTINA	710	
ALBERTI, Leon Battista	188	50-58	ARMENIAN ART	716	425-435
ALGARDI, Alessandro	216		ARMS AND ARMOR	729	436-455
ALKAMENES	217	59	ARNOLFO DI CAMBIO	755	456-465
ALLSTON, Washington	220		ARI, Jean	764	
ALTDORFER, Albrecht	221	60-67	ART	764	
ALTICHIERO and AVANZO	226	68-73	ART NOUVEAU	811	466-470
AMERICAN CULTURES	229		ASAM, The Brothers	814	
AMERICAS: ART SINCE COLUMBUS	244	74-146	ASIA, CENTRAL	815	471-490
AMMANATI, Bartolommeo	348		ASIA, SOUTH: TRIBAL STYLES	838	491-500
ANDEAN PROTOHISTORY	349	147-219	ASIA, WEST: ANCIENT ART	856	501-526
ANDHRA	400	220-227	ASIA MINOR, WESTERN: PRE-GREEK CULTURES; EARLY GREEK INFLUENCES	883	527-542

AALTO, HUGO ALVAR HENRIK. Architect, born in Kuortane, Finland, on Feb. 3, 1899, the son of an engineer. He was graduated from Teknillinen Korkeakoulu (Polytechnic School), Helsinki, in 1921. While still a student, he built his first house (in Alajärvi, for his parents). After a brief period in the Office of Projects for the Göteborg Exposition, Sweden, he carried out his first independent work at the Industrial Exposition in Tampere (1922). In 1924 he married Aino Märis (1894-1949), who had been a fellow student at Teknillinen Korkeakoulu and who had been graduated a year before him. This marked the beginning of a close collaboration which lasted for 25 years. Until her death all projects bore the signatures of husband and wife, despite the fact that Aino refused any credit for creating ideas, saying they were "entirely Alvar's."

At first (ca. 1925) Aalto collaborated with Bryggman and Hutunen. His name first began to be mentioned outside Finland about 1930, when his building for the *Turun-Sanomat*, a newspaper in Turku, called attention to his earlier works in Turku: a block in which the Finnish Theater is located (1927-28) and an apartment house. He gained prominence, however, with the following buildings, which may be cited as the major works of a fruitful 10-year period: the Viipuri Library (1927-35), the Tuberculosis Sanatorium in Paimio (1929-33; PL. 2), a house for himself in Munkkiniemi, Helsinki (1935-36), the Finnish pavilions at the Paris Exposition of 1937 and New York of 1939 (PL. 1; V, PL. 193), and Villa Mairea at Noormarkku (1938-39) for his friends the industrialists and art collectors Maire and Harry Gullichsen. For the Sanatorium in Paimio he designed the furnishings as well, and these are the first pieces of furniture in plywood and bent wood which has since become well known. For the manufacture and distribution of this furniture, a factory—the Artek Company—with a Swedish branch as well, was established. Aino directed the company from 1942 onward.

Competitions for architectural designs are general practice in Finland, and obligatory for public works. Thus, despite his international recognition, Aalto had in most cases to enter and win a competition before obtaining the commission for a building. This is true of the office block and theater in Turku (1927), the Paimio Sanatorium, the Viipuri Library, the pavilions for the Paris and New York fairs, and later works.

In 1938 the Museum of Modern Art in New York organized an exhibition of his works, which was later circulated to a dozen other cities. In that year Aalto went to the United States for the first time and gave a series of lectures at Yale University. In the following year he returned to the United States to erect the Finnish Pavilion for the World's Fair in New York. This pavilion and the one for the fair in Paris (1937) were of material prefabricated in Finland. So successful was the New York pavilion that he was invited to teach at the Massachusetts Institute of Technology, Cambridge, Mass., and Frank Lloyd Wright pronounced him a genius. Some years later (1947) he designed a dormitory for the institute.

His activities as an industrial architect began in 1930 with the Toppila Pulp Mill at Oulu, followed by the Sunila Cellulose Factory on Kotka harbor (1936-39; PL. 2) and others. His first attempts at city planning grew out of his industrial architecture, which included dwelling and business quarters

in addition to the factories themselves. Often his plans call for an integrated organization of buildings extending over a large area, and the result is an admirable compatibility between architecture and landscape. The dense forests and rocky ledges of Finland are indispensable accessories and often fundamental elements of his architecture.

Great as he is in technical matters, he confesses that, when confronted with a new project, he is frightened by the many problems to be solved. Rather than tackle them at once, he sets them aside and tries to forget them by losing himself entirely in the pleasure of designing from instinct. Suddenly an idea comes to him, frequently the various and often contradictory factors having been coordinated in the process.

Aalto makes frequent trips to the south of Europe. He is sensitive to problems of art in general and has had among his friends Brancusi, Arp, and Léger. He believes in the unity of the arts, but holds that it conforms to a superior order and is not limited to a superficial assembling of the components, since its point of departure is the *status nascendi*.

The precedents for Aalto's architecture should not be overlooked. He inherited from his forester ancestors the taste and sensibility for the beauty of wood. Although it seemed that technically all the resources of wood had been explored by now, Aalto and his wife disproved this notion. They made innovations in the structure and function of the various elements, even in the sawing of Finland's beech tree, a wood of quite exceptional homogeneity and smoothness. They used sheets of plywood as structural, functional elements, just as 10 years before Maillart had used reinforced-concrete layers as supporting elements. They exploited even the elasticity of wood, to the point that, without the use of metal, chairs could be molded like steel furniture. Aalto does not consider a model finished until it is possible to mass-produce it; the Artek Company, for example, maintains a check on the quality of manufactured products.

Aside from these departures from established methods, Aalto handles wood masterfully even in the traditional use of the material. In the initial stages there were times when this bordered on native vernacular. In the building for the Lapua Exposition he used large, roughly hewn vertical trunks, fitting them close to one another as in a barricade; in the orchestra platform at Turku and in the pavilion for the Paris Exposition, he used planks of various shapes and sizes. In the pavilion for the Paris fair and in the Villa Mairea he worked with narrow, ribbed birch boarding, arranged vertically. But, even when he uses rough materials, his buildings do not look like native architecture; on the contrary, they immediately reveal a highly refined sensibility. Aside from the fact that the planks are used in an upright position, and not horizontally as in the block form of ancient Finnish architecture, it is clear that the material itself is not being emphasized but is a necessary factor in the designing process. Though Finland's traditional uses of wood are ancient and still living, they make only a fleeting appearance in Aalto's work. His employment of wood is fresh and animated. In the pavilion at Lapua and the orchestra platform at Turku the undulating surfaces give the impression of mathematical shapes in wood. This was especially true of the ceiling in the lecture hall of the Library in Viipuri, where

unfinished and flexible strips of interwoven red pine, applied on an undulating surface, created a subtly calculated form with the beauty of an abstraction (FIG. 29). The same is true of the inner walls of the New York World's Fair pavilion. In the loggia of the Finnish Pavilion in Paris and in the stairway of Villa Mairea thin, smooth beechwood columns bound together with withes evoke the impression of the forest.

Aalto also uses wood in the solution of roofing problems. The roof of the covered stadium at Otaniemi (1954) spans 155 ft. without tierods. To accomplish this, Aalto organized the various elements with large boards nailed together and reduced the load by means of supporting ribs that converge. The ceiling of the Municipal Hall of Säynätsalo (1949-52) is supported by a cluster of rafters which radiate from a crossbeam anchored in the wall; and a similar structure may be seen in his small Finnish Pavilion at the Venice Biennial (1956). One critic has said that these spokes look like the corner ribs of a nonexistent vault. Indeed, they recall the fan vaulting of English Gothic churches, notably Gloucester. The mechanics of the structure are incontestable, but the complexity, which had already been seen in the school building at Jyväskylä, arouses certain doubts because of its ornamental qualities. It is surprising to find this insistence on structural virtuosity, because Aalto's earlier development was distinguished by a search for simplicity.

Problems of city planning have constantly interested Aalto. In 1934 he won the competition for the plan of a district of Munkkiniemi, Helsinki, where he lived; in 1936 he drew up a city plan for Varkaus and the housing area of the Sunila factory at Kotka; in 1940 he worked on an experimental city in which he posed the problem of synchronizing an anticipated expansion of individual houses, business quarters, and the city as a whole. What he means by "expansion of individual houses" is clarified in his article "Fine della 'machine à habiter'" (see *Writings*), which was written in 1946, when he drew plans for a postwar reconstruction program. He advises against erecting temporary buildings. If the means of constructing complete houses are not available, he suggests building the "nucleus of a house" — roof and some walls — with utilities such as water, baths, etc., for collective use. Subsequently these may be expanded and perfected without destroying an existing part.

The necessity for large-scale city planning arose after the second Russian-Finnish War in 1944. Administratively the task of reconstruction was handled by a government ministry; technically it was directed through an office of which Aalto was appointed head. Under his direction model plans were designed. The first was for the city of Rovaniemi, which had been completely destroyed during the war. One may be tempted to criticize Aalto's formalism and even his almost fanatic functionalism when one sees a large area completely cut into repeated hexagons juxtaposed in groups, but the uniformly compartmentalized units are disposed along the streets with such careful regard for the site that they seem to belong in the surrounding landscape and retain no trace of geometric rigidity. Indeed, far greater functionalism was apparent in his housing development of the Sunila factory at Kotka, and in the new center near the rapids of the Oulu River. At Rovaniemi the use of sharp-pointed hexagons permits great flexibility in distribution and gives form to the severe structural network.

Fundamental to Aalto's work is a love for nature. Ledges and rocks are dear to him. He plans around them and uses them to bring indoors some of the rough, untouched quality of the country. At his Mairea house the refinements of the rock formations and their outlines are at their best in the snow. The forest is the living ambience of his architecture.

Once Aalto had freed himself from the obvious traces of functionalism dominant in such works as the Sanatorium at Paimio and the Library of Viipuri, he became the exponent of organic architecture in Europe, a later parallel of Frank Lloyd Wright in the United States. His designs moved toward a disintegration of volume in space once he had replaced the cube, which he began to view with horror, by a coordinated sequence of planes. Ultimately this evolution was enriched by

the combination of, at first just wood and plaster, and gradually stone, brick, and ceramic, as may be seen in his experimental house. When designing living quarters, he has always known how to break up the weight of closed volumes with greenery, either by building in terraced forms, as at Kotka, or by dividing long expanses to make each individual dwelling independent.

When commissioned to design a large building, such as the M.I.T. dormitory in Cambridge (PL. 2), he lightened heavy masses with a rhythmic undulation which flows from the ground plan through the walls and outward into the exterior staircase.

The same felicitous interplay of nature and imposing volume appears in various parts of the interior, which, to use Zevi's words, is not broken up by the horizontal subdivision of the rooms but is carried through vertically. "It is not possible to speak of a first floor, a second or a third as separate entities because they have ceased to exist" (G. Labò).

Among later works, mention should be made of the civic center on the island of Säynätsalo (1949-52; PL. 3), also the result of a competition, and the studio-house which he erected for himself at Muuratsalo (1954-55). Both are linked to the distinctly organic style of the house at Munkkiniemi and the Villa Mairea of some ten years earlier. The Rantatalo office building and stores (1953-55) with its exposed framework shows Aalto's continued growth as an architect. For some years his second wife, Elissa Mäkinen, born in 1922 and a registered architect in 1949, has been his collaborator.

WORKS. House for his parents at Alajärvi; Industrial Exposition, Tampere, 1922; Trade Union houses and theater, Jyväskylä, 1923-25; restoration of the church in Anttola, 1925; restoration of the church in Pylkönmäki and construction of the bell tower, 1926-28; Agricultural Society Building in Turku, 1927-28; theater and hotel in Turku (competition piece), 1927-28; restoration of the church at Kemijärvi, 1928, in collaboration with Erik Bryggman; Exposition Building for the seventh centenary of the city of Turku, 1929; office building in Turku, 1929; the *Turun-Sanomien* Building in Turku, 1930; project for the University Hospital at Zagabria (competition piece), 1930-31; the Toppila Pulp Mill, Oulu, 1930-31; tomb of Prof. Usko Nystro at Helsinki, 1931; Municipal Library, Viipuri (competition piece), 1927-35 (FIG. 29); Tuberculosis Sanatorium, Paimio (competition piece), 1929-33 (PL. 2); project for a section of Munkkiniemi (competition piece), 1934; project for the railroad station at Tampere (competition), 1934; tomb of the architect Ahti Virtanen at Helsinki, 1935; Aalto's own house at Munkkiniemi, Helsinki, 1935-36; The Savoy Restaurant at Helsinki, 1936-37; Sunila factory near Kotka, 1936; workmen's houses for the Sunila at Kotka, 1936 (PL. 2); city plan of Varkaus (in collaboration), 1936-37; project for the museum of Tallin (competition), 1937; Finnish Pavilion at the Paris Exposition (competition), 1937; pavilion for the Agricultural Fair at Lapua, 1938; dwelling section in south Kymi, 1938-39; Villa Mairea at Noormarkku, 1938-39; Ahlström Werke at Kotka, 1938-39; Anjala Paper Mill in Inkeroinen, 1938-39; Finnish Pavilion at the World's Fair, New York (competition), 1939 (PL. 1); project for an experimental house, 1940; project for a district of Hakaniemi (competition), 1941; regional plan for the valley of Kokemäki, 1942-43; center district at the rapids of the Oulu River, 1943-45; community center of Ävsta (in collaboration with Albin Stark), 1944; section for the Strömberg at Vaasa, 1944-47; tomb for the architect Uno Ulberg at Helsinki, 1945; hospital for the Ahlström at Noormarkku, 1945-46; living quarters and expansion of the Ahlström factory at Karhula, 1945-47; project for a seven-story warehouse of the Karhula Glass Factory and its subsequent reduction to a single floor, 1945-49; reconstruction plan of Rovaniemi (in collaboration), 1946-48; sawmill and residence for the director of the Ahlström Company in Varkaus, 1945-49; pavilion for the Artek Company in Hedemora, 1946; dormitory for the Massachusetts Institute of Technology, Cambridge, Mass., 1947-49 (PL. 2); plan for the complex of buildings of the Finnish Technical High School in Otaniemi, near Helsinki, 1949; regional plan of Imatra, 1949; town hall and administration center of Imatra, 1949; community plan of the island of Säynätsalo, 1942-49; municipal buildings and library of Säynätsalo (competition), 1949-52 (PL. 3); clubhouse of the Engineering Society, STS in Helsinki, 1949-52; the Meesapolitino, an addition to the Sunila factory, 1950-51; entrance to an underground air shelter in the center (Erottaja) of Helsinki, used as a shopping center and for public baths (competition), 1942-51; enclosed stadium and tennis courts of the Finnish Technical High School in Otaniemi, 1950-51; project for a shopping center of the island of Säynätsalo, 1950-52; project for a theater and cultural center on Säynätsalo, 1950; store-

house of the Anjala Paper Factory in Inkeroinen, 1951; Kotka Paper Factory, Kotka, 1951; Typpitehdas Factory near Oulu with houses for the workmen and engineers, 1951-57; cemetery and chapels at Kongens Lungby (competition, second prize), 1951; project for a sports center in Vienna (first prize *ex aequo* with the Austrian Roland Rainer, who was commissioned to erect it), 1952; house and studio for Aalto at Muuratsalo, 1952-54; Teacher's University at Jyväskylä (competition), 1953-57; office building and Rautatalo stores at Helsinki (competition), 1953-55; houses in the Hansaviertel, Berlin, 1955-57; Finnish Pavilion at the Venice Biennial, 1956; first project for the Old-age Pension Building, 1948; second project and completion, 1953-56; city plan of Otaniemi, 1949; office building and auditorium in Helsinki, 1952-57; church at Imatra, 1952-57 (V, PL. 118); church at Seinäjoki, 1952-57.

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Mario LABÒ

Illustrations: PLS. 1-3.

ABBASSIDE ART. The dynasty of the Abbasside caliphs (749-1258) marks within the core of the world of Islam (see ISLAM) the birth of an immensely refined and cosmopolitan society whose artistic and spiritual life flourished vigorously.

With the separation of the Abbasside caliphate from the regions of western Islam and the shift of the capital from Damascus to Baghdad, close to the ancient Ctesiphon, a vast stream of Iranian influences came pouring in, charged with Sassanian survivals and reminiscences and with even more ancient Mesopotamian memories. The contribution of Hellenistic art to that of Islam became increasingly secondary and could not withstand the impact of this refreshing Orientalization.

Iranian influence in the political and religious field shortly became so overpowering that suitable measures were taken to limit and control it; however, its importance in the art of Islam was fundamental during the latter's slow evolution toward a more individualized esthetic.

The significance of this period, which is actually one of the most splendid in the entire Middle Ages, should also be explored in the field of history of art—the more so as the fall of the Abbasside rule lowered a dark veil over what had been a lively civilization intellectually and materially, a sad prelude, indeed, to the bloody and fatal Mongolian invasion that destroyed it.

SUMMARY. History and description of Abbasside architecture (col. 6). Architectural decoration (col. 7). Diffusion of Abbasside architecture (col. 8). Mural painting (col. 10). Miniatures (col. 12). Decorative arts (col. 13): Pottery; Glass and rock crystal; Woodwork; Textiles.

HISTORY AND DESCRIPTION OF ABBASSIDE ARCHITECTURE. The earliest monuments of Islam erected by the Omniad caliphs of Damascus showed signs of the Hellenistic tradition, because artists and builders were recruited from Syria, where this style was still prevalent. In the middle of the 8th century the Abbasside caliphs, by shifting the political center of the Moslem world from Syria to Iraq, exposed Moslem art, still in an early, unformed stage, to new influences inherited from the Sassanidae, even though, in the decoration of Omniad castles such as *Mshatta* or *Qasr al-Hair*, elements of Sassanian art are detectable.

Under the Abbassides the size of the buildings and the technique of construction are symptomatic of the architectural renewal, which reveals itself most importantly in the adoption of materials used from the earliest times in Mesopotamia: Syria was the land of hewn stone, but Mesopotamia used brick either sun-dried or stamped in molds and fired. Brick is used for walls and their rounded sustaining buttresses, for pillars, which in preference to columns act as isolated supports, and for the vaults that prevail throughout for lack of roofing timber.

It is precisely this scarcity of wood that accounts for the choice of the corbel vaulting system. Upon a wall rising straight from the ground a course of brick is laid with mortar, each brick projecting slightly inward from the surface of the straight wall; then a second course projecting a little more, then a third, so that finally the whole vault can be built, so to say, in the void without recourse to wood centering. This vaulting is especially prevalent in the *liwan* (Ar. *al-iwan*), a specifically Iranian form which the Abbasside school was to adopt and disseminate throughout the Moslem world. The *liwan* has a barrel vault, is closed on three sides, and is open on the fourth side without a façade wall.

We know the architecture of the early Abbassides only through literary references. Nothing remains of the original Baghdad founded by al-Mansur (754-75), with the caliph's palace in the center of its circular plan. Almost nothing of the Abbasside period remains in present-day Baghdad. (PLS. 6, 13).

To study the architecture of the caliphate prior to 800, it is necessary to travel 75 miles southwest of the capital to the castle of Ukhaidir, dating from the middle of the 8th century (K. A. C. Creswell determined that its foundations were laid after 775; see also Gertrude Lowthian Bell and L. Massignon). The buildings cover a square, each side of which measures about 230 ft., and are surrounded by a wall with projecting semicircular towers. Three sections can be made out: a central portion consisting of ceremonial rooms arranged around a vast court of honor, adorned with niches, and two symmetrical lateral parts, also with courtyards. In addition to a notable variety of vaults, this Moslem castle has the Mesopotamian *liwan* opening directly upon a court or into a gallery placed in front of it; and the T-shaped plan resulting from the conjunction of the long transverse gallery with the deep *liwan* was to spread over the entire Islamic world.

Abbasside architecture of the 9th century (3d of the Hegira) can be studied chiefly at Samarra—approximately 62 miles north of Baghdad—from 838 to 889 the residence of the caliphs, who there found shelter from the unrest of the capital. Ruined mosques and palaces remain at Samarra.

The Great Mosque of Samarra and the mosque of Abu Dulaf are surrounded by walls with round buttresses decorated with niches at the top. Within this enclosure the courtyard occupies a great space and is surrounded on three sides by galleries; the naves of the prayer hall open on the fourth side. Of the naves of the Great Mosque nothing remains except 24 rows of octagonal brick piers with four engaged columns to each. Ten of these naves, five on each side, extended from the hall on either side of the court. The Abu Dulaf mosque has sturdy rectangular pillars dividing the space between the court and the back wall into 17 aisles. A transverse aisle, 33 ft. in breadth, parallels this rear wall. The last two aisles on either side of

the building are prolonged to form parallel walls of the court. Rising somewhat to the north of the precincts of the two mosques, the minarets are in the same style, which is evidently of local origin. Spiral ramps wind around the cylindrical core of these two massive brick towers (PL. 11).

As the residence of the caliphs, Samarra is a city of palaces, of which three are known and attributed to as many Abbassides: Al-Mutasim, son of Harun al-Rashid, about 836 erected the Jausaq al Khāqānī, an imposing structure commonly and characteristically called "the Arab Ctesiphon." Indeed, it is obviously inspired by the Tāq-i Kisra, which the Sassanian kings of Ctesiphon built. Three liwans side by side open out to form a façade. The central liwan — 56 ft. deep and 26 ft. wide — has a tunnel vault 36 ft. high; the side ones are lower and much less deep. A succession of rooms at the rear of the central liwan leads to a square courtyard; four rooms at the four sides open onto it, forming a cross-shaped ground plan with the yard at the intersection. This was probably the harem. Beyond these buildings is a long esplanade, once embellished with plants and fountains; at its far end, subterranean chambers were dug out to serve as serdabs (Ar. *sirdab*), where the people of Iraq are in the habit of seeking refuge in hot weather. There follows a field for horseracing and the traditional game of polo.

The Bakuwāra palace is attributed to the caliph al-Mutawakkil (849-61). Two contiguous defensive walls enclose buildings and courts reminiscent of Ukhaidir. The handsome motif of the three liwans reappears (as in the Jausaq palace), as well as the arrangement of four rooms around a central courtyard and the planted courts with their walks intersecting at right angles — an Iranian type of enclosed garden that the Moslems were to carry as far as Morocco.

The caliph al-Mutamid (873-82) is supposed to have built the Qasr al Ashiq ("Lover's Castle"), which stands opposite the Jausaq on the right bank of the Tigris. Built on a hill, it has more the character of a fortress than of a palace; its surrounding walls measure 430 by 300 ft. and are reinforced with round towers, hollowed shallow rectangular niches capped with quarter spheres, the arches being cusped. One of the two short walls is interrupted by a rectangular projecting structure once connected by a bridge with an outer bastion.

A few private dwellings of the same period survive in Samarra in addition to these monuments of the Abbasside caliphs. Some are quite large, with several courts surrounded by rooms. Invariably off one of the narrow sides of the general ground plan there is a hall leading to a liwan, always in the T-shaped arrangement which we have already observed in the Ukhaidir castle and which we shall find again in Egypt. Cellars are fitted out as serdabs.

ARCHITECTURAL DECORATION. Abbasside art is noteworthy for the abundance of its decoration and for the variety of its decorative techniques: Mosaic, a legacy of Byzantium, remains in use and often presents the traditional combination of mother-of-pearl with tesserae of marble or colored paste. Marble inlay and enameled tile, which will find so much favor in Islamic ornament, appear early. Most prevalent, however, are plaster relief ornament (PL. 4) and painting on gesso. Carved and painted wood is employed for ceilings and doors.

In private houses, plaster reliefs decorated the dadoes of the adobe walls, the door jambs, and possibly the upper parts of the walls, though none remains.

The wide assortment of arches in Abbasside architecture leads one to conclude that their varied shapes should be considered ornamental fantasies quite independent of structural requirements. Besides the round arch we find the pointed arch — formed by the conjunction of two oblique lines and destined to become the characteristic arch of the Persians — and the cusped arch, which seems to have been inspired by the scalloped edges of seashells.

In this period various new forms of capitals came into being, as may be seen at Samarra or at Rakka on the upper Euphrates, a flourishing city in Abbasside times. These capitals are remote and very simplified descendants of the Corinthian type: at

the corners, four smooth leaves rise straight and curl down at the tip. Others have the shape of harebells or church bells. They are decorated with plant forms in low relief.

The same kind of decoration appears on the wall panels. To the acanthus and vine borrowed from the Hellenistic repertory are added the horn of plenty, the lanceolate flower, and the triangular palm branch derived from the wings on the crowns of the Sassanidae, all jostling one another and covering the entire panel so that only a winding furrow, an incised line, remains between them. Tightly packed with these patterns, the panels are often divided into squares, lozenges, stars, or scalloped medallions outlined by beaded fillets.

Ernst Herzfeld (1923, 1927) has made an extensive study of the decoration of Samarra and distinguishes three styles and their probable sources: The first utilizes Hellenistic elements; the second, less compressed and with buds recalling pine-cone scales frequently overlaying the plant forms, seems to be inherited from Sassanian art; and the third, lighter and more naturalistic, seems to be strictly Mesopotamian. The excavations at Hira, a Mesopotamian city that flourished in the 7th century, appear to confirm this derivation.

The palaces of Samarra are rich in decorative paintings; the colors are brilliant and mostly flat, enclosed by bold black outlines. Animals abound: tigers, zebus, dogs, eagles, hares, antelopes, ducks, herons, and cranes. The serdab of the great palace was decorated with camels in painted reliefs. Human beings also appear: female dancers and bearers of offerings. Particularly interesting are the figures of Christian priests recognizable by their inscriptions, men with long beards, wearing striped hooded mantles or robes strewn with crosses; they lean on great staves.

DIFFUSION OF ABBASSIDE ARCHITECTURE. To the architecture of the Abbassides known to us through Samarra is related that of the Tulunids, who reigned in Egypt during the same period, because Ahmed ibn-Tulun, founder of the short dynasty that ruled the land of the Nile from 868 to 905, had been brought up in the train of the caliphs and had remained in communication with the court of Samarra. Having made of the province that he governed an almost autonomous kingdom, ibn-Tulun made it prosperous by his vigorous administration and endowed it with beautiful architectural works: an aqueduct (of which the ruins can yet be seen), a hospital, and a large mosque, much decayed, and now considerably restored.

The plan of the ibn-Tulun mosque includes a vast court 320 ft. square with double galleries on three sides. The prayer hall opens onto the fourth side; it is divided into five transverse aisles that run parallel to the façade, 17 arches in width. The entire mosque is of brick; and this fact alone, in the land of pyramids and stone temples, would suffice to emphasize the acceptance of the influence of Iraq. The massive pillars are brick and are rectangular like those of the Abu Dulaf mosque, but their corners are softened by engaged columns of cut brick. A kind of window is inserted above the pillars between the great arches, which are four-centered, somewhat flattened, and of handsome proportions. Restrained decoration of plaster reliefs underlines the main architectural features: a frieze runs beneath the ceilings; a narrow border surrounds the arches and connects them; interlaced braids and plant forms ornament the intrados; and bell capitals covered with incised motifs terminate the engaged columns. All the decoration as well as the minaret in its original form is closely related to the style of Samarra.

The palaces of Ahmed ibn-Tulun and his son have vanished, but excavations in the old quarter of Fostat (Ar. *al-Fustāt*) have brought to light private residences that may well be of the same date (Aly Bahgat Bey and Albert Gabriel). Like the mosque, these houses conform to the models originated in Samarra. Some are very large with rooms disposed around multiple courtyards. Masonry fountains are frequent. There are liwans on three sides of the courts, but at times they are quite shallow and consist simply of an arch cut into the wall. The remaining side contains the two pillars and three arches of a wide porch, into which a liwan opens. Small rooms flank

this liwan, thus reestablishing the rectangular plan of the whole. The T arrangement of Ukhaidir and Samarra can be recognized in the relation of the portico to the liwan. The ceremonial rooms of wealthy Egyptians bear witness to a conscious imitation of the fashions current at the court of the caliphate.

The spread of Abbasside art and of its extension, the art of the Tulunids, is evident in Egypt outside the capital; in fact, it overflows beyond the frontiers of Islam, revealing its influence, for instance, in a Coptic monastery of Wadi el Natrun in lower Egypt, the Deir as-Suryani (Samuel Flury, 1915), which dates from about 900. In this Christian building it is the decoration rather than the plan that is Moslem; the local sculptors most naturally used the same models for the decoration of a chapel that they had learned on the scaffoldings of Fostat or Samarra. With the exception of the crosses rather clumsily introduced into the panel compositions, every motif is borrowed from the Mesopotamian repertory, especially from the third style described by Herzfeld. Ornaments and fruits derived from grape leaves and grapes are rendered in the incised, linear technique. The winged palm branch also appears, its stem often loaded with pine cones.

Samuel Flury, who called attention to this Egyptian extension of Abbasside art, studied also a similar phenomenon in Persia in the mosque of Naylin, a little city of the Yezd region (Viollet and Flury, 1921, and Flury, 1930). The extremely archaic plan of the mosque testifies to its age; and an analysis of its plant and calligraphic decoration suggests a date toward the end of the 9th or the beginning of the 10th century. The compact, incised linear style is everywhere, and the motifs are tightly clustered so that no background shows through; in the mihrab, the two cylindrical pillars are completely embroidered with garlands as are the soffits of the arches, which are broken up into compartments by braided motifs.

That Abbasside art continued into Tulunid Egypt is evident, but it probably spread into other parts of North Africa with the Aghlabids — vassals of the Baghdad caliphs — who rebuilt the Great Mosque of Kairouan during the 9th century (see BIBLIOG., Marçais, 1954, 1925). Now these Arab emirs constantly received gifts from their overlords, mostly luster pottery but once even the wood for a pulpit (still in existence), so that we know that the flow of influence continued; despite the great geographical distance, architects drew from Mesopotamian examples, as is evidenced by the domes, by the shape of the arches, by the shell-shaped squinches, and by the shallow niches surmounted by quarter spheres. Even in the distant ruins of the Saharan city of Sedrata (see Marçais, 1954), which flourished one or two centuries later, we find again the arches of Samarra.

This city did not cease to radiate its influence even after the collapse of the caliphate. In the 10th and 11th centuries, the art of the Fatimids retained traces of it: above all, the compact type of decoration persisted, particularly in carved wood. The heritage left by the Abbassides constitutes a permanent enrichment of Islamic art.

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Georges MARÇAIS

MURAL PAINTING. Painting of the early Abbasside period (9th century) is known to us from the German excavations of the ephemeral caliphal residence Samarra (836-92) or, rather, from E. Herzfeld's publication *Die Malereien von Samarra* (Berlin, 1923), because the originals are now mostly lost, owing to the lack of proper care during and after World War I. These wall paintings were found in the reception rooms of bourgeois houses and in the nonpublic parts of palaces, especially the harem quarters, where no religious function took place. A favorite location of such decorations was the domes over square halls. Another source of paintings, still unexplained as to purpose, is decorated jars forming a kind of pictorial column. Fragments of 12 such pieces were found hidden under the floor of the throne room in the Jausaq Palace. Besides these actually preserved paintings, literary references also provide some clues. For instance, Yaquut (*Mu jam al-buldan*, ed. F. Wüstenfeld, IV, Leipzig, 1869, p. 440) tells us of the soon-to-be-ruined palace called al-Muhtâr, where in the time of the Caliph al-Wathîq (842-47) there were paintings showing a church with monks, among whom the leader of the vigils was specially stressed.

Important as the finds of F. Sarre and E. Herzfeld were as an indication of an extensive school of painting, the full range of this art is still hardly known to us. The field of ruins of Samarra is immensely vast, and only very small areas have so far been excavated. Then the material itself was very fragmentary, and the meaning of many scenes could only be guessed. Thanks to Professor Herzfeld's efforts, there are, however, enough clues to give us certain ideas about the subject matter and style of these paintings.

As to the iconography, there are first purely ornamental subjects, such as heavy cornucopialike rinceaux in which seated female figures, frequently musicians, are placed; then there are hunting or fighting animals. Animals also form the filling patterns of other subjects, where they have no relationship to the represented theme. A second group pertains to the caliphal banquet, showing either drinking scenes or representations of female entertainers such as heavily dressed dancers pouring wine or half-nude shawl dancers. Another form of entertainment is the hunt, and here again female figures are participating. There is a particularly fine representation of a huntress on foot, who, with the help of a hunting dog, has cornered an antelope tagged with a fluttering ribbon to indicate that it comes from a caliphal deer park. A third group has apparently a mythological origin, although it is unlikely that the original meanings were still understood at the time. Here we find female figures on leonine or fantastic animals, obviously derived from earlier representations of goddesses, and Nereids disporting themselves in the water; it is not clear whether the fishtails represented belong to goddesses or to the animals on which they are riding. A painting showing male figures in arcades is too fragmentary to allow specific interpretation. Of the buried picture columns, four showed dignitaries which Herzfeld thought to represent Christian priests, an explanation which has now been challenged by J. Sauvaget in a study offering some new interpretations; two others showed knights holding long swords, probably margraves or landed squires descended from the *marzbân* or *dihqân* of the Sassanian period; and the rest represented either young men or women. Two of the columns are signed by the artist Ahmad ibn Musa and two others by another artist, whose name has been read and interpreted by Herzfeld as Miflah (or Mifallah) *musammas*, the latter denoting a cleric who assists the deacon at the Christian Mass or a Manichean of the second grade of initiation.

The style of the Samarra paintings is a very ponderous one, with black outlines for the heavy, fleshy-faced figures. They are painted with strong colors of the same intensity throughout, with no indication of space or atmosphere. There is no landscape in which the human beings or animals could move; only occasionally the barest symbolic indications are given.

Herzfeld carefully analyzed this style and established its origin. A good deal of the iconography is Hellenistic or possibly Greco-Bactrian, as shown by the drinkers, dancers, musicians, and Nereids, by the rinceaux, and by the fact that the female figures are seen riding on animals instead of standing on them as they would have done in ancient Oriental art. Also, certain stylistic features are of Hellenistic derivation, such as the half side view or the indication of the folds. But the style as a whole is basically Sassanian in spirit and content, and even the Hellenistic elements have been transformed by Oriental concepts. Indeed, what could be farther from Hellenistic art than many of the heavy, lifeless figures, seen frontally like cold Oriental idols, often arranged in rows or even one row on top of the other? Even when there is movement, it is either ponderous and slow or greatly exaggerated and therefore unnaturalistic. The remoteness from the real aspect of things is shown by the garments, which are either of one color with indications of folds or covered with a pattern and lacking folds. The animals, too, have a double aspect, just as they do in Sassanian art: reduced to their essential forms with their characteristic features well marked, they can be either motionless patterns, often placed in rows as in Sassanian silks, or they can be rendered in a more active naturalistic style, following one Oriental tradition which is here reinforced by Hellenistic style concepts. The figures and scenes are often framed in the Sassanian manner by pearl bands forming circles or squares, or they are set in arcades. Such a dependence on Sassanian paintings can be assumed, although this art is known to us only from very few fragments, because it can be reconstructed from other Sassanian monuments such as rock reliefs, silverwork, silks, and seals. All the parallels adduced by Herzfeld were from Iran, which together with Iraq formed the main part of the Sassanian kingdom. He was, however, fully aware that the still-unknown Sassanian art of Iraq might have shown regional differences which would be significant for the explanation of the Samarra paintings. That Sassanian painting was full of vitality and able to exert a wide and lasting influence is shown by the paintings found in Miran in Chinese Turkistan, which portray the same physical types as the Abbasside paintings, especially the faces, which are shown with the same conventions. They represent an eastern branch of Sassanian art, while the Samarra fragments are a western form.

Herzfeld thought that Abbasside painting as shown in Samarra was a last echo of Sassanian painting, but more recent finds have demonstrated that the style lasted beyond the 9th century. Thus, many of the elements of the art of Samarra were transplanted to the Nile valley through Ahmed ibn-Tulun (868-84), the founder of a dynasty in Egypt. It can be assumed that what there was of painting in his capital al-Qatā'i followed this style. It continued to exist in the Fatimid period, although the heaviness of the earlier Abbasside style was reduced, by a realistic tendency evident in the excavated wall paintings and in figural representations on pottery and ivory. As far as iconography and style are concerned, the most remarkable survival of early Abbasside painting is, however, to be found in the ceiling paintings of the Cappella Palatina in Palermo of the middle of the 12th century, which are now well known to us, thanks to the work of Ugo Monneret de Villard. Although artists of different geographical origin probably participated in the execution of this ceiling, and many style forms can be isolated (Coptic, Fatimid, Syrian-Mesopotamian, Iranian), Monneret de Villard is convinced that one of the main elements derives from Abbasside court paintings. As the ceiling of the Cappella Palatina is iconographically more extensive and far better preserved, in spite of later restorations, than the Samarra fragments, it will eventually help us to get a better understanding of Abbasside painting. The close relationship in the pictorial arts of Iraq and Fatimid Egypt is also indicated by a reference in Maqrizi's *Ĥiṭaṭ*, to a competition between an Egyptian and an Iranian painter who painted the same subject and used similar stylistic means.

Besides this western branch of Abbasside painting, there existed also an east Iranian one, which preserved the Sassanian tradition even more thoroughly, being hardly touched by Hel-

lenistic concepts. Still, a painting of a female head of the late 8th or early 9th century found in Nishapur by the Metropolitan Museum expedition is quite close to the art of Samarra or Miran. A certain connection with Abbasside art exists also in the wall paintings found by Daniel Schlumberger in Lashkari Bazaar, the winter palace of the Ghaznavids in southwestern Afghanistan. The serial arrangement of the figures, the drawing of textile patterns without indication of folds, and the belt with suspended elements occurred in the same way in Samarra. However, in these east Iranian paintings the Central Asiatic element must also be regarded as a strong formative constituent.

MINIATURES. Unlike the Abbasside painting of the early and middle periods, which is known to us mainly from wall paintings, the pictorial art of the final period, the last decades before the destruction of the caliphate and its capital, Baghdad, is found in manuscripts. At that time the caliph's power was restricted to Iraq, but in spite of this limited area, we can distinguish at least two style centers, in Baghdad and Mosul. There are two iconographic groups, i.e., manuscripts which illustrate either scientific treatises or belles-lettres. The most important manuscripts of the first group are a *Kitāb al-Daryāq*, with no indication of place of origin, dated A.H. 595 (1199) (Bibliothèque Nationale, ms. arabe 2964); the *Kitāb al-Bayṭara* by Ibn al-Ahnaf, written in Baghdad in A.H. 605 (1209) (Cairo, Bibliothèque Egyptienne, ms. no. 8, f. Khalil Agha); the Arabic translation of Dioscorides' *De materia medica*, no place, written in A.H. 621 (1224) (ms. in Istanbul, Santa Sophia, with many miniatures now detached and in European and American collections); and another manuscript of the same work from northern Iraq, dated A.H. 626 (1229) (Istanbul, Topkapu Saray Museum, no. 2148). Since these scientific treatises are translations from Greek texts, and their miniatures are based on Byzantine illustrations, these late Abbasside paintings betray a great deal of classical tradition, in both iconography and stylistic treatment. However, the Greek sages, especially on the frontispieces showing the authors, and other human figures have become Islamized. Also, while the Middle Byzantine manuscripts on which these Arabic scientific miniatures are based show only an incipient narrative character, this tendency is now much more pronounced. Instead of just giving a plant to illustrate a chapter in a herbal, as had been done for centuries in the purely Greek manuscripts and those following their tradition, the Arab miniaturists show also where the plant grows, the initial treatment of the herb, a pharmacist compounding the drug before a doctor and a king, a pharmacy, doctors in discussion, a physician treating patients, etc. There is also a strong sense of realism, although emotion and conversation are rendered by exaggerated gestures.

The two most important belles-lettres manuscripts are from the *Maqāmāt* by al-Hariri, both without indication of a place of origin, but most probably from Baghdad, one of them dated A.H. 634 (1237) (Bibliothèque Nationale, ms. arabe 5847) and the other of about the same period (Leningrad, Asiatic Museum of the Academy of Science). In these manuscripts the narrative and realistic qualities are even more pronounced than in the scientific group. They provide very apt illustrations to a text which has little to offer in the way of action and only supplies various milieus; nevertheless, these genre scenes afford a very good insight into the life and morals of the urban middle class of the early 13th century. Every kind of outdoor and indoor scene is portrayed with apparent ease; the naturalistic flavor is enhanced by a definite interest in character studies and in the psychological aspects of the various scenes. Thus we find the bored or suspicious governor or cadi listening to a case, the eager plaintiff before him, the ennui of uninterested bystanders, the uncomprehending wonderment of a half-wit, and so on. In its free and responsive style the figure drawing in these paintings is comparatively little encumbered by earlier conventions. They are therefore quite different from the more courtly paintings of the earlier Abbasside period and even the later Iranian paintings, with their strongly symmetrical compositions and their emphasis on the power and dignity of the representative of the government (be it king, governor, or cadi).

There is also to be found the beginning of a land- and sea-escape, though still only as the setting of the action. These designs of nature are more conventional than the figural scenes and in many miniatures remain restricted to a few trees, flowers, and a strip of grass. There is, in some instances at least, also an awareness of the third dimension. On the whole, space is more successfully indicated in minor details (as when a figure is shown standing behind a column) than in the rendering of a more complex scene, for instance of a village or a camping ground. In spite of the remarkable advance in the rendition of the surrounding world, the presentation of the miniatures is still primitive. There is no frame to separate the painting from the surrounding text, and the background is formed by the unpainted color of the paper.

The Mosul group is stylistically related to the Baghdad paintings, although we are not yet fully cognizant of the precise difference between the two schools. The Mosul school shows possibly more Irano-Turkish influence, as it was under the rule of men of that cultural background; hence the courtly aspect is more apparent than in the freer "Arabic" manuscripts of the Abbasside capital. The main Mosul manuscripts are a set of *Agami* volumes made in 614-16 (1217-19) for the library of Badr al-Din Lu'lu', the regent of Mosul (now in the libraries of Cairo, Istanbul, and Copenhagen). Other manuscripts possibly from that locale have been discussed by K. Holter and H. Buchthal.

DECORATIVE ARTS. The term "Abbasside decorative art" can be applied to the handicrafts of the various regions of the caliphate only from 750 to about 900; after that date till 1258 only the art of Iraq can — on account of the shrinking power of the caliphs — be designated as "Abbasside."

Pottery. Of all the decorative arts, pottery made perhaps the most remarkable advances during the Abbasside period, with the first flowering of the craft occurring in the 9th century. In the periods immediately preceding the upsurge of Islam, fine pottery had played only a very minor role in Iran, Syria, and Egypt. When the mental attitude toward this medium changed with the arrival of the new religion, the potters had to find the proper forms and types of decoration. They first tried imitating earlier or foreign potteries, and only after some time did they succeed in developing the shapes which were appropriate for the material and the designs that expressed the spirit of the new Moslem civilization.

In Roman times, in the centuries shortly before and after Christ, potters had created various vessels which — though green-glazed on the outside and yellow on the inside — imitated metal vessels with a repoussé decoration. These wares served as models to the Moslem potters of the 8th and 9th centuries, especially in Egypt and Khuzistan (Susiana). The pieces are usually covered with a green lead glaze, but this color is sometimes combined with yellow and purple. Both the shapes — little platters; gadrooned, one-handled cups; condiment dishes; and larger bottles — and the delicate relief decorations, which copied ornamental features on metal vessels, were singularly inappropriate for clay products; yet the potters must have thought quite highly of them, since among them occur the first signed pieces, by Husayn and Abū Naṣr al-Naṣrī (or al-Baṣrī), the latter working in Misr (Egypt). This relief pottery reached its apex in Iraq in the 9th century, as finds in the ephemeral capital Samarra indicate. Besides small platters, flat bowls appear now for the first time; the decoration consists no longer exclusively of late classical floral patterns, but also of geometric interlacings garnished with arabesques; and the glaze has now an all-over gold luster finish with only a few green spots, which are probably accidental. The whole is still an imitation of a metal vessel, and as such much cheaper than the original gold piece, but here for the first time were tested ideas which were successfully developed in later centuries.

An entirely different type of inspiration came about the 8th to 9th century from the other end of the world, the T'ang pottery of China. In these Far Eastern prototypes the lead glaze is mottled green, yellow, and occasionally purple or covered

with streaks in these colors. Because of their striking appeal, imports of these wares were quickly copied, and vessels of this type in which the colors are either splashed on in a haphazard way or allowed to run into radial patterns appear not only in Iraq but also in Egypt, Iran, and Central Asia. The Near Eastern potters went even beyond the Far Eastern prototypes by combining this splashed-glaze technique with graffito work; that is, covering the unglazed vessel with a slip (*engobe*) through which is cut a line design that is visible through the glaze.

The 9th century saw also the rise of entirely new techniques. In a first group the glaze on bowls, plates, and jars was made white and opaque by the addition of tin, and in it simple, bold designs were painted with a strong cobalt-blue pigment. This was the first time in ceramic history that this color combination was used, centuries before the potters of the Yuan and Ming dynasties painted with Mohammedan blue on white kaolin. In certain pieces this blue-on-white design is combined with the green and yellow streaks of the T'ang type of ware. Again, these wares must have been regarded with a certain professional pride, because some of them are signed, the most distinguished potter being a certain Ṣālih, who like the other potters producing this ware probably worked in Baghdad. In another group the same type of white glazed vessel is decorated with gold luster applied in a second firing. As the excavations of Samarra have shown, sometimes several tones of luster were combined — reddish, greenish, and brownish. In these pieces the luster does not cover the whole glazed surface as it does in the earlier type but is used as a pigment to create elaborate floral and geometric designs composed of many units which are often hatched or dotted so as to give a maximum effect of gold. The same type of design done in not more than two color shades was also used for square wall tiles. The finest collection of such tiles, in the mihrab of the Great Mosque in Kairouan, dates from A.D. 862. More unusual are the ones found in Samarra, as they show either rosettes in wreaths surrounded by pentagonal tiles or boldly drawn leafy rinceaux. Toward the end of the Samarra period (ca. 860) the potters started to restrict themselves to only one luster tone (PL. 8), and this restricted range became the usual technique of the 10th century. As a departure from the earlier period, animal and human designs became now quite common, the figures being given in silhouette and with the simplest outline on a background either plain or densely covered with fine chevrons or dotted circles. Outside Iraq the type has been frequently found in Iran, probably either imported or made by itinerant potters. The popularity of the technique is also attested by the fact that in Khorasan the designs were rather effectively imitated in yellow clay slip, which has the same color appearance but lacks the sheen of the luster.

The utilitarian pottery of the period is unglazed. The most impressive group consists of large water-storage jars (*habb*), many of them from Takrit on the Tigris. The rather coarse decoration in harbotine and incised techniques consists of animals, human figures, and floral patterns and covers the upper part of the body and neck (PL. 4). The type was first described by F. Sarre, in 1905, but has been surveyed more recently by G. Reitlinger, who assumes an old tradition but attributes the surviving pieces to the period from the 9th to the early 14th century and distinguishes three different styles. The most important pieces of this group come from the 12th or early 13th century. Smaller everyday pieces have their decoration of animals, floral forms, or Kufic writing applied by molding, to the upper part in the case of jugs, or on the underside in the case of bowls. Other groups of unglazed jugs have engraved or stamped designs; they date from the 11th to the 13th century and come from Iraq or Iran.

The luxury pottery of the late Abbasside period (12th to early 13th century) is represented by the wares from Rakka on the Euphrates (PL. 10). A number of types can be distinguished. There are carved or molded wares with turquoise-green glaze; this group consists mostly of pierced lamps, incense burners, small floor tables, and tiles. Underglaze-decorated jars and bowls are painted with floral patterns, chevrons, or Neakhi writing in black under a green or clear glaze; more ambitious

designs including animals and human figures are executed in black, blue, and reddish brown under a colorless glaze. Finally there are jars, bowls, and tiles painted with a deep-brown luster on a clear greenish glaze, the luster sometimes being combined with blue and green splashes or lines. The designs of Rakka pottery are often rather sketchily applied, and the glazes have a tendency to decay in the earth, so that large areas of the designs are obliterated by iridescence. The best of these wares belong to the most distinguished group of Islamic pottery, and although they sometimes copy contemporary Persian designs, they have, on the whole, a very characteristic style of their own.

Glass and rock crystal. Here again Samarra provided the best information about glass shapes and techniques current in the 9th century. The most important techniques were the various forms of cutting. The Samarra finds were brought out by C. J. Lamm in a special publication. As we know from a passage by the 11th-century Persian scholar al-Birūnī, rock crystal was carved into vessels in Baṣra in lower Iraq in the 10th century. So far it has, however, not been possible to isolate Iraqi pieces from surviving medieval carvings.

Woodwork. The earliest Abbasside period is represented by a number of carvings which show dense designs of vine leaves and grapes in high relief and with a sculpturally treated surface (late 8th century). A fine example, probably from a *minbar* (pulpit), is in the Metropolitan Museum. The most important example of wood carving of the period is, however, the well-preserved *minbar* of the Great Mosque in Kairouan. Each of its many panels shows a different design, representing either fretwork or stylized floral arrangements. The beveled style of the Samarra period (9th century) is not only found in Iraq but is widely used under the Tulunids and early Fatimids in Egypt, and it occurs in regions as far away as Tunisia and Central Asia. This style continued to persist, though slowly deteriorating, until the early 14th century (PL. 4). It seems that no post-Samarra Moslem woodwork from Iraq has been preserved or has so far been recognized as such. It was probably related to the stone and stucco carvings. Contemporary woodwork in the churches of Iraq can also provide clues to it.

Textiles. One of the prerogatives of the Ommiad and Abbasside caliphs was the *ḥirāz*, the privilege of having garments embroidered with their names in fine Kufic lettering, which gave not only the official name and titles with the appropriate formulas, but also additional data such as the date and place of manufacture (usually Egypt, but also Iran and Iraq), the name of the factory's supervisor, etc. A long series of such fabrics has been preserved in many collections, nearly all of them recovered in Egypt. The texts of most of them have been published in chronological order in the *Répertoire chronologique d'épigraphie arabe* (Cairo, 1931 to date). Complete catalogues with illustrations of only two larger collections have been brought out, the more important being that of the Textile Museum in Washington, D. C., the other being that of the Museum of Fine Arts in Boston (the Washington collection has a series of dated *ḥirāz* fabrics of Abbasside caliphs from A.D. 854 to 991). The most important collection is in the Museum of Islamic Art in Cairo.

More significant from an artistic point of view are fabrics with designs (PL. 7). Although R. B. Serjeant has made a survey of the textile production of Iraq (and not only that of *ḥirāz*) from literary sources, the many types mentioned in the medieval texts have, on the whole, not yet been identified among the preserved fabrics. Looking at the surviving textiles, the earliest which one can associate with the Abbassides are certain wool and cotton tapestries, some of them with ibex designs of strong Sassanian character. For material and stylistic reasons it is assumed that they were most likely made in Iraq in the 8th century. An unusual type of textile, made in Baghdad in the 9th century, is a group of silks with fine, colored-silk brocading embroidery. Their most characteristic patterns are small roosters in octagonal frames placed in a field of other geometric units. The range of this series and its development

have been established by E. Kühnel. The textile arts of Iraq in the late 10th or the first half of the 11th century are again represented by tapestries and embroideries. The silk tapestries show abstract patterns with a great deal of gold. Even more sumptuous are the silk and gold embroideries on *mulham* ground (ribbed cloth of fine raw-silk warps with wefts of coarser cotton). They display beautifully stylized animals (lions, peacocks, griffons) in roundels or in rows on the undecorated ground. These examples also give an idea of the loom-woven silks from Iraq, about whose attributions scholars have so far not agreed. One magnificent woven silk of the late 11th or early 12th century, with sphinxes in large animated circles and rich interstitial designs, was copied in Spain in the color scheme usual there, but the inscription of the original stating that it was made in Madinat al-Salām (Baghdad) was retained.

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Illustrations. PLS. 4-13.

'ABDU 'Š-ŠAMAD, or ḤVĀḤA 'ABDU 'Š-ŠAMAD. Persian calligrapher and painter who became one of the founders of Moghul painting in India. The main source of information on his life is the *Ā'in-i Akbari* by Abū'l Fadl 'Allāmi, the

secretary and prime minister of the Moghul emperor Akbar (b. 1542, d. 1605). According to this source, Ḥvāga 'Abdu 'ş-Şamad had the honorific title of *Şirin-qalam*, "sweet pen." He came from the great south Persian center Shiraz, where his father Ḥvāga Nizāmu'l Mulk had been vizier to the governor, Şāh Suḡā'. Before 1555, when the exile of the second Moghul emperor Humayun in Iran came to an end, 'Abdu 'ş-Şamad went to the then Persian capital Tabriz to pay his respects to him. Since he was at that time already known as a painter and calligrapher, one can assume that this visit was made with the ultimate aim of presenting himself as a prospective candidate for imperial service. This action proved successful; Humayun invited him to come to him, and though he was unable to accompany the emperor at once, he followed him in 1549 (956 of the Hegira) to Kabul. According to a note in a copy of the *Timūr-nāma* in the Public Library in Bankipore, the emperor and his young son Akbar, while living in Kabul, took lessons in drawing from 'Abdu 'ş-Şamad and interested themselves in the subject of painting. As far as Akbar is concerned, this interest is further corroborated by Abū'l Fadl's statement that "from his earliest youth, His Majesty has shown a great predilection for this art, and gives it every encouragement, as he looks upon it as a means, both of study and amusement." Because of Akbar's personal interest, Moghul painting in India first found sustained support in his reign; thus, the early studies of the young prince under 'Abdu 'ş-Şamad had the greatest repercussions, probably not so much in the development of the artistic abilities of the student as in creating a profound interest in the future emperor. When in January, 1556, Humayun died soon after his regaining of power in June, 1555, his son and successor Akbar continued his special interest in the artist from Persia. According to the custom of court historiography, this was expressed in the following manner: "Though he ['Abdu 'ş-Şamad] had learned the art before he was made a grandee of the court, his perfection was mainly due to the wonderful effect of a look of His Majesty, which caused him to turn from that which is form to that which is spirit."

In this period 'Abdu 'ş-Şamad acted also as teacher, and it is said that his pupils became masters. The best-known of these was the Hindu artist Daswanth, who, having been handed over to the Ḥvāga, in a short time surpassed all painters and became the first master of the age (*Ā'in-i Akbari*, p. 108). There is a painting by Bihzād which a marginal gloss states to have been corrected by the Ḥvāga (see below).

'Abdu 'ş-Şamad's career under Akbar is, however, not only that of an artist, but also of a grandee, since "on account of his former service, [the emperor] paid him great honor and reverence." He was made a commander of 400 (*ṣāḥr-ṣadr*) and it was said that "low as his position was, he had great influence at court." An indication of his social position is the fact that his son Şarīf was made a school companion of Prince Salīm, the heir apparent, whose great favorite he became and who gave him the high title Amīru'l Umarā and entrusted him with the great seal when he became emperor (*Ā'in-i Akbari*, pp. 517-518). In 1576 'Abdu 'ş-Şamad was put in charge of the mint in Fatehpur Sikri, and finally in 1584, at the end of his official career, he was appointed Dīwān (Revenue Commissioner) of Multan. As a protégé of the emperor, it was also natural that he accepted the new Divine Faith (*Dīn-i Ilāhī*) founded by Akbar, and he is thus listed as one of the adherents by another convert, Abū'l Fadl (*Ā'in-i Akbari*, p. 209).

The year of his death, like that of his birth, is not known, but if the attribution of a painting in a Nizāmī manuscript dated 1593 in the collection of Dyson Perrins is correct (see below) — and it seems likely that it is — it must have been after the completion of this book.

'Abdu 'ş-Şamad derives his initial fame from his skill as a calligrapher, hence his honorific title *Şirin-qalam*, which P. Browne, quoting an unnamed source, says was given to him by Humayun.

A calligrapher of the name 'Abdu 'ş-Şamad, but with the title "Maulānā" (like nearly all the other scribes), is given in Abū'l Fadl's list of such artists (*Ā'in-i Akbari*, p. 102), and

this maulānā is also mentioned as scribe and poet in Amīn Aḥmad Rāzī's *Haft Iqlīm*, but whether this calligrapher is identical with the Ḥvāga is uncertain; in any case, there was another calligrapher, Maulānā 'Abdu 'ş-Şamad Mašhādī, of whom Qāḍī Aḥmad says that he was unequaled in the art of gold sprinkling. One miniature in the Gulistan Museum Album is signed "the slave *ḥikastaraqam* 'Abdu 'ş-Şamad *Şirin-qalam*," which indicates that he himself did not use the honorific title of Ḥvāga or of Maulānā but had a special reputation in the type of writing called "*ḥikasta*"; also Abū'l Fadl mentions in one place that he was so skillful as to be able to write the verses of the 112th sura of the Koran on a poppy seed. Another accomplishment of 'Abdu 'ş-Şamad was in literature, as mentioned in the *Ā'in-i Akbari* (p. 209), and this is also stated in the *Haft Iqlīm* if the Maulānā 'Abdu 'ş-Şamad mentioned there is identical with the Ḥvāga.

'Abdu 'ş-Şamad's place in the history of art rests, however, on his contribution as a painter. The earliest picture ascribed to him by a Western scholar is a royal picnic scene in the Moghul Album, known as the "Moraqqa' Gulšān," in the Imperial Library in Teheran. This is a typical Safawid painting in Tabriz style of the second quarter of the 16th century. There is no signature or ancient attribution on the painting, nor is there any other, more compelling reason why this painting should be ascribed to this particular painter, especially as the album could contain the work of any artist from Iran.

It has often been stated, especially by P. Browne (see BIBLIOG.) and by H. Glück (see BIBLIOG.) that 'Abdu 'ş-Şamad collaborated with Mīr Sayyid 'Alī, a fellow painter from Iran in Humayun's employ, to execute the 14 folio volumes of the *Dastān-i Amīr Ḥamsa*, of which many pages still survive in Western museums. Glück even attributes several of the paintings on these pages to the artist (pls. 23, 31, 33, and 40 of his publication; see BIBLIOG.). It seems, however, doubtful whether this is correct, as Şāh Navāz Ḥān in his *Ma'āşiru 'l-Umarā* (p. 44; see SOURCES) states that it was Akbar who had this text written and illuminated on a large scale and that the 50 painters engaged in this project were supervised by Sayyid 'Alī and afterward by Ḥvāga 'Abdu 'ş-Şamad of Shiraz, without their active participation being mentioned.

The earliest datable painting is therefore a miniature (now combined at its lower edge with one of *Maḡnūn in the Desert* of the period of Bihzād) in the Moraqqa' Gulšān in the Imperial Library in the Gulistan Palace of Teheran (PL. 14). It shows two young men seated in a landscape, one painting, the other, apparently of inferior rank, playing a stringed instrument. An inscription (not by the artist) at the right edge states: "Made by Maulānā 'Abdu 'ş-Şamad in half a day on Nawruz [New Year's Day] 958" (A.D. 1551).

The youthful artist in the painting could very well be Akbar, 'Abdu 'ş-Şamad's pupil, and as such a very appropriate subject; the miniature may have served, as L. Binyon, J. V. S. Wilkinson, and B. Gray have thought, as a New Year's gift. On the whole the style of this painting is Persian, except that Akbar's turban follows the fashion of Humayun's court.

Another painting in the same album in Teheran is likewise in pure Persian style and, as it does not represent a subject connected with the court, being an illustration to a story in the *Gulistān* of Sa'dī, is even devoid of Indian fashions. It shows a dervish running into the woods to praise God as the birds do, while his fellow travelers in the caravan are seen asleep or attending the animals (PL. 14). This miniature has a decorative label in the lower left corner, stating in Persian: "The slave, the *ḥikasta* writer 'Abdu 'ş-Şamad, sweet pen."

In view of the self-derogatory wording and the calligraphic quality of the writing, which would fit a painter who is likewise known as a calligrapher, it is not impossible that this is an authentic signature of the artist. The style of painting is derived from the Tabriz paintings of the Şāh Tahmāsp period (ca. 1540), but is in a more realistic vein; this work is closest to some miniatures in the Jāmī *Dīwān* (now in the Freer Gallery of Art, Washington) written in Khorasan between 1556 and 1565 for the Shah's nephew Eakandar Mīrzā.

Possibly the next painting in date is another from the same album showing the presentation of a miniature by Akbar to his father Humayun, who is seated on a platform in a *čanār* tree next to a pavilion (PL. 16). Compared with the previous paintings, this miniature has a much more complex composition. It renders a large number of figures in various attitudes and activities; besides the main scene in the upper right corner we see court attendants, grooms, and hunters outside the gate, servants bringing food, musicians, and people in conversation. Here the authorship of the painting is indicated by a tiny inscription on a book near a figure which may very well be that of the artist himself. After an introductory formula which is a pun on the name of the emperor Akbar, it states: "The slave 'Abdu 'ş-Şamad, 'sweet pen (Şirîn-qalam)." Because of the presence of the word "slave" and the absence of any title such as *Īvāga* or *Maulānā*, this is probably a genuine signature. Also, the fact that the miniature offered by Akbar to his father reproduces the same scene in a tiny space tallies well, as W. Staude has observed, with 'Abdu 'ş-Şamad's reputation of having written a chapter of the Koran on a poppy seed. The painting represents a scene which must have taken place before January, 1556, when Humayun died; it could very well be of that period or only slightly later. Although this miniature is still strongly Persian in the drawing of the *čanār* tree, the pavilion with its decorations of tiles, its frescoes of lovers and hunting scenes, and its angels in the spandrels, yet the hustle and bustle of the subject, the realistic approach of the painter, and the way of showing attendants and servants outside the walls with the main scene behind, that is, higher up in the painting, betray Indian style. The subject must have had a certain artistic renown, because there exists a 17th-century Moghul copy which was incorporated in the miniature scheme of Schönbrunn Castle near Vienna.

The next two miniatures, which are also in the same album in Teheran, portray the same subject: a groom leading a fine horse. The one which was thought by Binyon, Wilkinson, and Gray to be the earlier of the two is signed: "Made by 'Abdu 'ş-Şamad on New Year's Day 965" (1557). Unfortunately no photograph of it is available; there is only a brief description by the English scholars. The other (PL. 15) is calligraphically inscribed, "Abdu 'ş-Şamad, sweet pen" in such a way that it can hardly be assumed that it is from the hand of the artist. The subject is still Persian, and so are the groom's costume, the decoration on the saddlecloths, the running brook in front, and the *čanār* tree in the middle ground. However, the small units of the rocky outcroppings at the side of the tree and especially the hermitage with its meditating devotee in the right background are Indian and foreshadow such features in many Akbar paintings. If the painting is indeed by 'Abdu 'ş-Şamad and not a version after him, it would have to be later, when the artist had already assumed a number of the Indian stylistic features.

Another work attributed to the artist is a drawing in an album of the Bodleian Library, Oxford (Ouseley Add. 172, fol. 4) representing *The Arrest of Šāh Abul Ma'ālī by Tūlaq Hān Qochī* (PL. 15), a historical event which took place shortly after Akbar's enthronement in 1556. Since the "signature" includes the honorific title *Īvāga*, it is probably the attribution of a Moghul librarian or connoisseur. Although the handling of the lines and, in particular, the way of representing form and mass have parallels in Persian drawings, the work as a whole is more Indian than Persian. This applies not only to the costumes, especially the turbans, but to the interest in portraiture, in the representation of a historical, near-contemporary event, and particularly in the choice of a scene of violence rendered with a certain degree of psychological characterization — all features which are specifically Moghul and appear first in the mature Akbar period. The assumption of some scholars that the drawing was made soon after the episode in 1556 seems therefore unlikely, and at best we have here a later work which has been ascribed to the master.

The last painting attributed to 'Abdu 'ş-Şamad is on folio 82 in the manuscript of Nizāmī's *Ĥamsa*, dated 1593, in the collection of Dyson Perrins in Malvern, England. It represents

a princely hunt of stag, antelopes, foxes, and onagers with dogs and cheetah (PL. 17). The conception and perspective of the rocky landscape, the spirited composition, and the costumes are in Akbar style, with none of the pure Persian mannerism. If this fine miniature is therefore actually by 'Abdu 'ş-Şamad, he had at the end of his life fully adapted himself to the Indian style of his adopted country, just as he had accepted the new religion of his imperial master.

One other painting has an association with 'Abdu 'ş-Şamad, because in that case the work, by the little-known Akbar painter Bihzād, was, according to the old marginal note, corrected by 'Abdu 'ş-Şamad. Though the painting, even so, is not distinguished, it supports the remark in the *Ā'in-i Akbarī* that the master gave instruction to various pupils.

While the works so far discussed are ascribed to 'Abdu 'ş-Şamad on the basis of old attributions, there is one large painting on cotton, *The Emperors and Princes of the House of Timur*, painted about 1550 (though with later additions), which for historical and stylistic reasons has been connected with the master by Western scholars, first by Laurence Binyon, then by others such as Emmy Wellesz and Abdullah Chaghatai. All these writers have, however, pointed out, and quite rightly so, that it may also be by 'Abdu 'ş-Şamad's compatriot and fellow worker, Mīr Sayyid 'Alī. This painting, now in the British Museum, is still in pure Persian style and would thus represent the pre-Indian stage of either of the two artists.

SOURCES. The *Ain-i Akbarī* by Abul Fazl 'Allāmī, trans. H. Blochmann, I. Calcutta 1874; Amin Ahmad Rāzi, *Haft Iqlin*, cf. H. Ethé, *Catalogue of Persian Manuscripts in the Library of the India Office*, I. Oxford, 1903; *Šāh Navāz Hān, Ma'āṭirū 'l-Umarā*, trans. H. Beveridge, Calcutta, 1913; *Timūr-nāma*, cf. *Catalogue of the Arabic and Persian Manuscripts in the Oriental Public Library at Bankipore*, VII. Patna, 1921.

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Richard ETTINGHAUSEN

Illustrations: PLS. 14-17.

ABSTRACT ART. See CUBISM AND FUTURISM; EUROPEAN MODERN MOVEMENTS; EXPRESSIONISM; NONOBJECTIVE ART.

ACADEMIES. See INSTITUTES AND ASSOCIATIONS.

ACOUSTICS. Man has probably known since the earliest times that walls affect the transmission of sound. Evidence of this can be found in the fascination that resonance and echo have for primitive peoples and for children. Musical instruments (q.v.) also originated from the observation of the characteristic sound properties of certain materials. However, since very little is known about the music and the dramatic spectacles of the prehistoric world or of the first great Oriental and pre-Hellenic Mediterranean civilizations, we cannot be certain that acoustics were considered when natural sites were modified or buildings constructed for particular ceremonies, performances, or public assemblies. The same difficulty confronts us even today in the study of Middle and Far Eastern architecture and civilizations. Indian literature gives some hint that courts for performances and assemblies were "built so that each sound (*svara*) and letter (*akṣara*) should be audible" (*Mānasa*, XXXIV, 506).

The Greeks were probably the first to make a systematic study of the phenomena of sound. Pythagoras (6th cent. B.C.) established a mathematical theory of music, and later Aristoxenos (4th cent. B.C.) opposed him in upholding the greater importance of sensory qualities and expressiveness. Conscious

efforts to adapt the forms of buildings to acoustic requirements also date from this period (see STRUCTURAL TYPES AND METHODS).

The odeum, which provides an example of these efforts, was devised especially for musical performances, and an attempt has been made to reconstruct its acoustic character on the basis of archaeological evidence (Bagenal). It was generally a spacious square enclosure with seats arranged in ascending curved rows. The ceiling was constructed of square frames made of thick beams arranged so that each corner rested on the center of a side of the one below. To conceal this complicated construction and at the same time improve the clarity of reception, a large awning in the form of a pavilion was hung from the center and attached to the upper walls.

The science of acoustics was an important and sometimes even a decisive factor in the development of the Greek theater. Dörpfeld has suggested that the theater was of Ionic-Aeolic origin and derived its circular form from the "orchestra," the space where the performers and spectators of the lyric chorus stood; but archaeological evidence does not seem to support this theory. Modern views, based on sound historical evidence, recognize a development that began with the first rectangular "theaters" belonging to the Minoan palace of Phaestos and Knossos, as well as with those of the first Mycenaean age in Hagia-Triada and Gournia, gradually took form in the proto-Hellenic *agorai* of Iatos, Dreros, and Amnisos, and finally produced the theater of Dionysos at Athens.

A theater was erected according to the plan of this famous Athenian model at Syracuse in 475 B.C., the work of the architect Demokopos, who may have been advised by Aeschylus. The auditorium had a trapezoidal plan, the two sides fanning out from the stage. The acoustic scheme was very simple: the relatively unobstructed orchestra floor, the stage, and the scenes, painted on skins and attached to the sides of the stage, all acted as reflecting surfaces sending the sound back toward the auditorium, which actually was not very large, the distance between the stage and the seats at no point exceeding 98 ft.

That this acoustical system was not merely a matter of chance is apparent from some of the ingenious devices employed to improve it. Under the wooden stage platform, for example, was an opening 8 ft. deep and as long as the entire stage. In addition to its acoustical function, this space was also used for handling painted scenery. Another underground cell at the center of the orchestra (out of which apparently an altar was raised for thymelic spectacles) also had an acoustical function. The extremely narrow stage, which was also characteristic of later theaters, is difficult to explain except by the assumption that it prevented the actors moving so far from the back of the stage during the performance as to lose the reinforcing effect of its reflecting surface on their voices.

In the second half of the 5th century, another type of trapezoidal theater, with side walls converging toward the stage and greatly limited orchestra space, became prevalent at Catania, Magnesia, and elsewhere. Anti attributes the alteration in ground plan principally to acoustic reasons. The new plan, similar in outline to a megaphone, minimized the echoing and confusion of sounds that commonly occur in theaters with two diverging walls when the auditorium is not filled.

The oldest semicircular theater was probably that built at Epidaurus in 360 B.C. by the architect Polykleitos. His architectural formulation must have been due either to an intuitive sense of acoustics or to an attempt to give all the spectators an equal view of the stage. In any case the acoustic problems that arose from the new form were brilliantly resolved. In general, during the entire history of the Greek theater, dramatic, visual, and acoustic requirements received equal consideration, and it would undoubtedly be wrong to isolate any one of these factors as of primary concern.

At Epidaurus, in order to compensate for the increased height of the auditorium, it was necessary to raise the stage above the level of the orchestra. Between the columns that enclosed this raised stage were inserted panels of wood called *pinakes*, which, together with the platform of the stage, created a virtual resonance chamber.

The semicircular design first used by Polykleitos was often copied, and among the resulting problems was the need to increase the volume of sound, since the auditorium continued to be enlarged, reaching a maximum distance between the stage and the seats of from 230 ft. in the theater at Syracuse to 330 ft. in that at Athens. To accomplish this the stage was expanded and raised in order to lessen the dispersion of sound, and an intensive search was made for favorable natural positions where the prevailing currents of air would carry the sound toward the highest seats.

The Romans went to extremes to avoid dispersion of sound and finally consolidated the auditorium and the stage building. Instead of taking advantage of the natural slope of the land, they built an integrated architectural whole that was independent of its site.

The Roman theater was characterized by excellent acoustic arrangement. A large slanting roof was built over the stage to reflect the sound toward the seats. This structural device made it possible to dispense with the narrow stage and sound-reflecting stage wall used by the Greeks. The Roman architects also built a gallery above the top row of seats, fully aware of its acoustical function. In the theater at Orange the portico was covered by a parabolic roof that extended beyond the columns, apparently for the purpose of deflecting the flow of sound and directing it back to the auditorium. This device is frequently used in present-day theaters.

The *De architectura* of Vitruvius is the only text surviving from antiquity which deals at any length with the applications of acoustics to architecture. Vitruvius took much of if not all the content of his book from the lost book of Aristoxenos. His detailed but hardly exhaustive description of the famous acoustic vases (*De architectura*, V, 5) had a tremendous influence on medieval techniques. These bronze vases were believed to be resonators for specific chords and are supposed to have been fitted into openings cut into the theaters according to definite rules. Since no trace of them has ever been found in any ancient theater, however, it seems reasonable to suppose that what Vitruvius described in his book was not common practice but a theoretical experiment suggested by a Greek technician, perhaps Aristoxenos, and superficially interpreted (FIG. 23).

The Middle Ages inherited from antiquity an empirical knowledge of the acoustics of enclosed areas as well as some of the traditions of Roman architecture. But medieval architects made use of natural phenomena from an entirely different point of view and therefore used the acoustic devices of antiquity in different ways. The practical skill and professional mastery characteristic of medieval building techniques made it possible for specialists to perfect technical refinements based on empirical criteria but did not give rise to scientific experimentation. As a result, it is difficult to evaluate some of the acoustic characteristics of medieval buildings. We can surmise that they originated in careful study, but they could also have been due to the geometric shapes of the roofs or walls, chosen for reasons of mere form or statics. An interesting example of this aspect of building is the Baptistery at Pisa.

The use of acoustic vases by medieval architects is well documented and undoubtedly had a special significance. They were not bronze, as were those described by Vitruvius, nor were they designed to act as precise resonators for definite chords; rather, they were simple terra-cotta vases in a variety of forms, many resembling those in ordinary household use. They were particularly widespread in France, where many examples of the technique are found. The earliest known use was probably in the church of Pommieres (11th cent.). Other examples are the dome of St. Martin d'Ainay at Lyons, the choir of St. Martin d'Angers, the church of St.-Thomas-la-Garde (12th cent.), the church of Turtoirac and of St. Blaise at Arles (13th cent.), the Charterhouse of Villeneuve d'Auvergne, and St. Urcize at Cahors. In Cyprus they were used in St. Mary of Mount Carmel at Famagusta. In the 15th and 16th centuries they were placed in the church of the Cordeliers at Chalon-sur-Saône, the church of the Celestines at Metz, St. Patrice at Rouen, and the church of Sotteville and Bellencombte. The

latest known example is the churches at Montvillier, built in the 17th century. In Italy there are only two examples: the Byzantine church of the Panaghia at Rossano Calabro and S. Bartolomeo del Fossato at Sampierdarena (FIG. 26).

Acoustic vases were usually placed in the walls of the choir with their mouths turned outward, and frequently they were covered with layers of plaster. They were also sometimes set in a depression under the floor to form a network of small openings (as in the church of the Cordeliers at Amiens and St. Martin at Metz). This arrangement calls to mind a passage from the *Physics* (V, 6) attributed to Aristotle concerning the increase of resonance in enclosures built over empty spaces and the acoustical properties of terra-cotta vases.

Regardless of the value of such expedients, the acoustics of medieval churches vary remarkably. In basilicas with a

added. The organ, the choir, and the orchestra were located in a large gallery on the inner side of the façade. The principal reflecting elements were the back wall and the vaults, which are 26 ft. high at the highest point. The building is remarkably well suited to the performance of choral music, both with orchestra and with organ, as a result of the extremely short time of reverberation when the church is crowded and also the various wooden architectural elements that tend to reinforce the effects of choral masses for which a somewhat longer reverberation might be desirable.

At the beginning of the 15th century, however, the spirit of the new era challenged the medieval devices for improving building acoustics, devices often applied mechanically in blind obedience to tradition, with effects that were rarely controlled by systematic experiment. The following passage from a chronicle of the convent of the Celestines at Metz, dated 1432 and first published by Bondelleur, typifies the contemporary attitude of skepticism toward the acoustic vases as an aid in amplifying and correcting the reception of sounds: "In the aforesaid year, in the month of August, on the Eve of the Assumption of Our Lady, after brother Ode le Roy, prior of Seans, had returned from the General Chapter, he ordered vases to be put in the choir of the church at Seans, because he had seen them in some churches and thought they might be useful. And they were put into use all in one day, with the help of as many workmen as were necessary. I do not know, nonetheless, if the singing is better now than it was before. And it is very likely that the walls have been damaged or weakened, and many who come to Seans marvel that this has been done. Some say at times that it would have been better if the vases were put outside the church to enjoy the fresh air and give pleasure to fools." Under this note is added the significant comment: "Ecce risu digna" ("Here is something worthy of laughter").

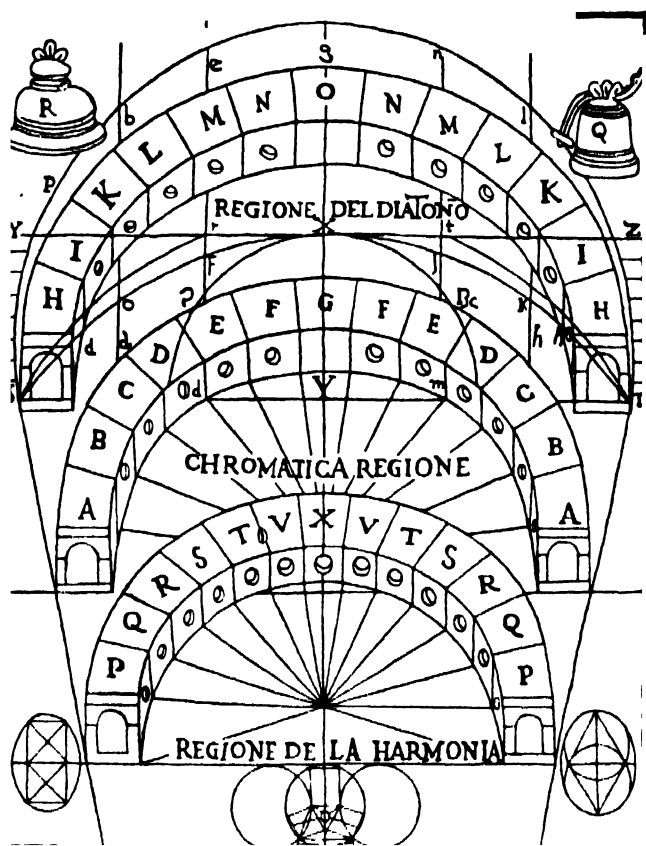
As humanism grew in importance, the authoritative sources of classical tradition which had been idolized for centuries began to be questioned. An example of this new critical viewpoint may be seen in the chapter on theaters from Alberti's *De re aedificatoria*, in which he discusses the vases (*aechea*): "I do not here propose to linger with Vitruvius upon those matters which have to do with division and composition of music, according to the rules of which he would have the aforesaid vases placed in theaters so that they correspond in proportion to the deepest, the middle, and the highest voices; matters perhaps easy to speak of, but how they may be accomplished only he knows who has done them."

It is possible that in this passage Alberti reflects the perplexity he felt when Nicholas V commissioned him (1452) to construct a temporary theater at the Vatican for his court. We have as little information about this theater as about the one built by Raphael at Castel Sant'Angelo for Leo X, so that it is difficult to judge their acoustic properties.

We have more reliable evidence, however, about the wooden theater constructed in 1539 at Vicenza by Serlio. According to the illustrations in the second book of his treatise on architecture, the large open space between the stage and the seats and the great height of the stage itself must have contributed to good sound reception. In any case, the theater basically preserved the resources and characteristics of classical models.

The Teatro Olimpico at Vicenza, designed by Palladio and built by Scamozzi (1588-89) with certain modifications, although it still reproduced the classical scheme, represents the first attempt to deal with the major problems of modern theater design. At the back of the stage, three large openings in diminishing perspective break the reflecting plane of the stage wall, creating vast areas of sound absorption. What very likely offset this acoustic imperfection, however, was the introduction of the flat ceiling, especially after the galleries were added below it. In essence, what revolutionized the acoustical properties of the theater was the discovery of perspective, with its use of imaginary space as a distinct architectural element.

The theater built at Sabbioneta in 1589 by Scamozzi represents a fundamental change in that it helped to formulate characteristics that were to remain constant in later develop-



Scheme of distribution of acoustic vases in a theater, from G. B. Caporali's edition of the *De architectura* of Vitruvius, Perugia, 1536 (redrawn).

single nave and two side aisles, the resonance was fairly good, even if the time of reverberation was rather long. In the Romanesque period the best reception of both words and music was undoubtedly obtained in churches with a single aisle, a wooden trussed roof, and uninterrupted reflecting surfaces. Vaulted roofs, especially those whose height greatly exceeded the width of the nave, caused distortions of sound. Principally because of this type of vault but also because of the transept, the acoustics of large Gothic cathedrals generally had an unusual quality. The unexpected resonances were in many ways desirable, but words and sounds were not transmitted clearly and distinctly. On the other hand, reception was excellent in the German Gothic churches without transepts and with a single nave and two side aisles of almost equal height. A famous example is the church of St. Thomas at Leipzig, associated with the musical activity of Johann Sebastian Bach. It was built at the end of the 15th century and slightly remodeled after the Reformation, when the galleries and tribunes were

ments. The back wall of the stage no longer presented an unbroken surface, and the sound was reflected from the floor and walls of the proscenium instead. The new style was further developed in the Teatro Farnese at Parma, built in 1618 by G. B. Aleotti. Here, the classical stage is withdrawn to the sides in an elaborate architectural arrangement, and the single central opening becomes the threshold between two different realities. The overwhelming size of this area created a definite acoustic problem. The pit, or orchestra, which was always empty during theatrical performances, reinforced vocal effects, and the blind double arcades of painted wood, above the ascending rows of seats, to a great extent absorbed echoes and reverberations, or sound trails. Nevertheless, reception must have been very poor, especially in the upper rows. Many of the private halls constructed for princely families during the first years of the 17th century must have presented similar problems. Preference was given to U-shaped and rectangular structures, the latter particularly for temporary buildings.

The decisive impulse toward the creation of the typical Italian theater design was given by the development of public theaters, with a new class of spectators filling the orchestra, sitting on chairs and benches in an area below the stage platform. This change revolutionized acoustic design, severing the last ties with the ancient theater. The orchestra space, now crowded, was transformed by the high coefficient of absorption of the spectators' clothing into an area of sound absorption. The first Venetian public theaters, S. Cassiano and SS. Giovanni e Paolo, were built with acoustic considerations in mind, if we may judge from contemporary designs showing the inclined ceiling of the proscenium.

The baroque architects were acquainted with the elements of acoustics and the difficulties of applying their knowledge in the construction not only of theaters but of churches as well. The first churches erected in Lutheran Germany differed from their Catholic prototypes not only in their lack of a clear focal point but also in acoustic planning. The Lutheran service required above all that the preacher's voice be clearly heard in every part of the church. At the same time, the shift from polyphonic to instrumental music increased the possibility of sound trail. In general, the old Catholic churches were adapted to the new sect; however, there are some rare examples in northern Germany of churches built expressly for the Lutheran faith, closely resembling in design the new theaters, with open galleries that absorbed sound and with raised pulpits. Good acoustics were apparently a fundamental aspect of the newly formed Protestant tradition in church architecture, as illustrated by Sir Christopher Wren's famous remark that it would be useless to erect a parish church so large that the congregation could neither see nor hear the service. Actually, according to Wren, the Roman Catholics are able to construct churches of such magnitude that the faithful can neither hear nor see only because it is enough for them to hear the murmur of the mass and see the elevation of the Host. Protestant churches, he continued, must be so designed that every word will be intelligible (J. Summerson, *Christopher Wren*, London, 1954).

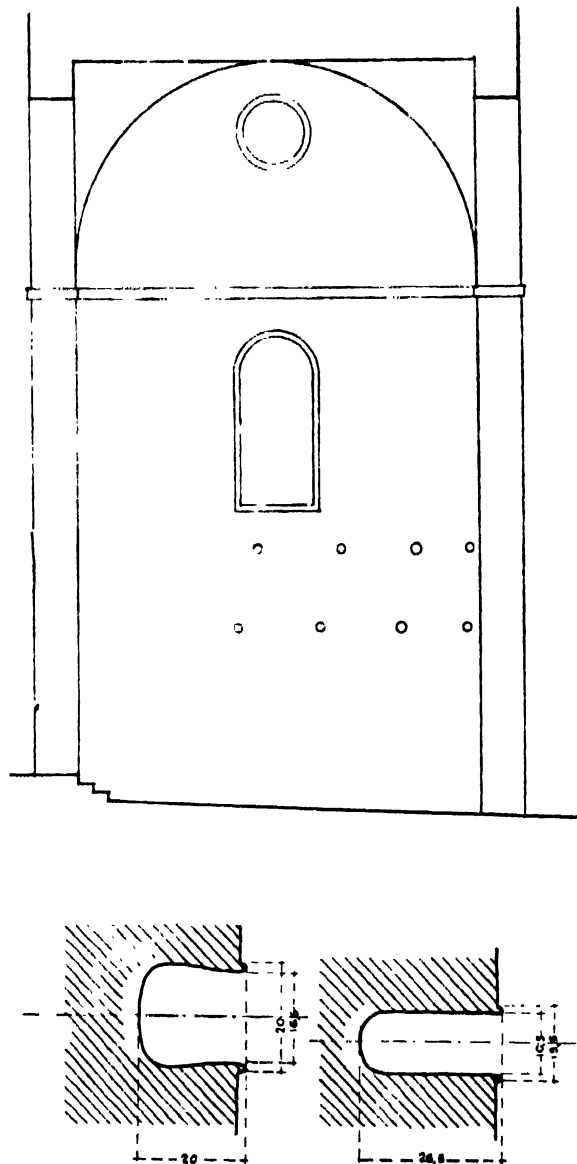
The Catholic church in the baroque period rarely took acoustics into account except in the form and position of the pulpits and their integration with the wooden baldachins, which were often of monumental size.

Perhaps the first Catholic church constructed primarily for musical performances and designed expressly for that purpose was the new Oratory of the Filippini, which was built about 1637 by Francesco Borromini adjoining the church of S. Maria in Vallicella in Rome. The orchestra was placed in an open gallery directly under the vault, which reflected the sound with such resonance that reception was as good in the pit as in the front galleries in which dignitaries sat. The coved ceiling, with its decorative bands, was an obvious acoustic device used to even finer purpose by Borromini in the Cappella dei Re Magi in the Palazzo di Propaganda Fide in Rome, (PL. II, 311).

A letter of about 1630 from an unknown Florentine to Prince Barberini, published by O. Pollak (*Italienische Kunstlerbriefe aus der Barockzeit*, *JhbPreussSamml*, XXXIV, 1913,

Sup.) offers evidence that Vitruvius' theories were still respected in the baroque period. Along with other suggestions for the construction of the new palace of the Quattro Fontane is a proposal to build a vaulted concert hall with acoustic vases placed in suitable openings coordinated with the brackets.

When two persons stand diametrically opposite one another under an elliptical or semicircular vault, certain concentrations



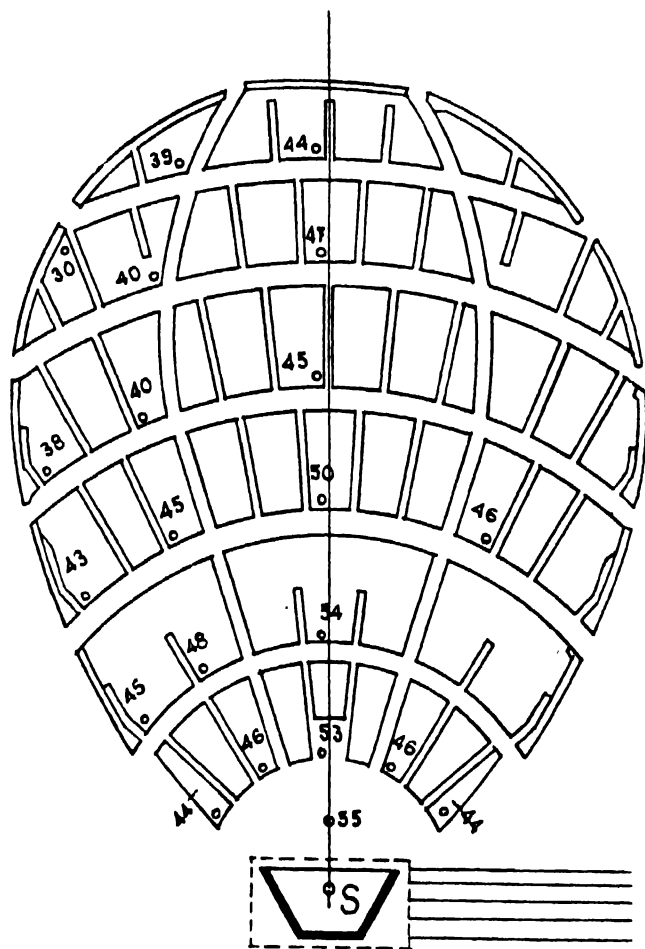
S. Bartolomeo del Fossato at Sampierdarena (near Genoa), projection of the end section of the right nave wall next to the presbytery and sections of two vases inserted into the wall (from G. De Angelis d'Osati).

of sound occur which enable them to hear one another distinctly even when they speak in low voices. This remarkable acoustic phenomenon occurs in the smaller nave of St. John Lateran (though for some reason only in one bay), in St. Paul's in London, at Versailles, and in the dome of St. Peter's, at the height of the drum. York Hall in Washington also was well known for this characteristic; it was destroyed by fire, however, and when rebuilt no longer exhibited this phenomenon.

The typical architectural achievements of the 18th century were the result of empirical or directly intuitive acoustics, as exemplified by the appendix signed "G. G." which Bernardo Vittone added to his *Istruzioni di Architettura*. There is an amazing and exultant resonance in 18th-century buildings in

Piedmont and in Germany which highlights the problem of the relation between music and architecture.

One of the first works specifically devoted to theatrical acoustics is Carini Motta's treatise on the structure of theaters and stages (Guastalla, 1676), which deals with public and private halls. In both types of buildings the ceiling is given great prominence as a sound reflector, and its wooden structure and its junction with the walls are given special study. Carlo Fontana is credited with having resolved the formal problems of Italian theater construction in 1677 with his elliptical plan for rebuilding the Roman Theater of Tordinona. In this hall, attributed to Alessandro Specchi, the six equal tiers of boxes are ranged uninterruptedly along the walls, extending even to the sides of the proscenium. The mechanical repetition of



Plan of the large open-air theater of Hollywood Bowl and distribution of acoustic energy in the various areas, expressed in decibels calculated at 512 Hz. (from Knudsen)

equal elements, carried to such lengths, must have been remarkably attractive at Tordinona. In 1774 Patte firmly supported, mainly for acoustic reasons, Fontana's use of elliptical construction and in particular the horseshoe design of a semi-circle connecting two straight lines. He argued that any sound originating in one of the two foci of the ellipse creates a concentration of sound (his "column of sound") at the other focus which serves to renew the sound for the areas farthest from the stage. He also maintained that bells propagate sound in spherical waves and the human voice, being directed, in ellipsoidal waves.

Tomaso Landriani, who translated Patte's text into Italian, opposed to this argument the excellent acoustics of the Scala theater in Milan, conceding to the horseshoe design merely esthetic superiority. Certainly, scientists and architects, in their detailed analyses of the "acoustic line" to be observed in theater construction, always tended, at least in the abstract,

to prefer the two-dimensional plan, ignoring the behavior of sound in the third dimension. In actual practice, however, the plan of the Italian theater, especially the smaller type of hall, made possible good reception, although it was somewhat "dead" acoustically; it was therefore well suited to the quick rhythms of 18th-century music. Distortion was more of a problem in the larger theaters, as for example in the Communal Theater at Bologna, where the sound is so radically transformed as it reverberates from the boxes that musical effects are completely misrepresented. In Rome the acoustics of several halls were greatly improved when the partitions between the boxes were lowered in the interests of public morality. Benedetto Alfieri showed an understanding of acoustics in his construction of the Teatro Regio at Turin, now unfortunately destroyed. Here the partitions between the boxes were curved as if they were segments of imaginary circles concentric with the royal box at the center. In his official report Alfieri states that he adopted this plan to avoid making the walls meet at acute angles, thus distorting the sound. The most notable feature of the Teatro Regio was undoubtedly the capacious sunken orchestra pit surmounted by a reverse vault, forming a sort of harmonic box; either end of the pit was a tube that directed the sound to the front of the stage.

The French theater has certain characteristics analogous to the Italian, although it was designed for stage representations of greater variety and ingenuity and offered the general advantage of a more spacious type of hall. Acoustically, the greatest innovation was the construction of a large gallery above the last row of boxes and the widening of the ceiling, which had a coved vault, to extend beyond the curve of the boxes, a minor innovation occasioned by the fact that French society required less privacy and intimacy than the Italian. In the following century there was less theoretical discussion of the subject, and the acoustical aspects of the theater were subordinated to other interests. "I must explain that I have adopted no principle, that my plan has been based on no theory, and that I leave success or failure to chance alone." This amazing statement was made by Charles Garnier in his famous work on the Paris Opera, the most magnificent of all the renowned 19th-century theaters (C. Garnier, *L'Opéra*, Paris, 1880).

The Bayreuth theater, built for Richard Wagner (1871) by Bruckwald and Semper, was a reaction against this skeptical attitude. In contrast to the aristocratic and the bourgeois theater that faithfully mirrored to society its own artificial structure, Wagner proposed a theater whose design would establish an intimacy between the spectators and the stage and express the mystical essence of a performance, absorbing the spectator in a new kind of reality. Bayreuth exhibits interesting acoustic novelties and may, at least formally, be considered a precursor of the modern theater. Its fan-shaped plan clearly proves that functional considerations were of primary importance. The paired columns in the interior of the hall converge toward the stage and act as acoustic reflectors, distributing the sound effectively. The acoustic characteristics of this auditorium, which is strongly resonant within the limits of accurate musical reception, are particularly suited to the full cadences of Wagner's music.

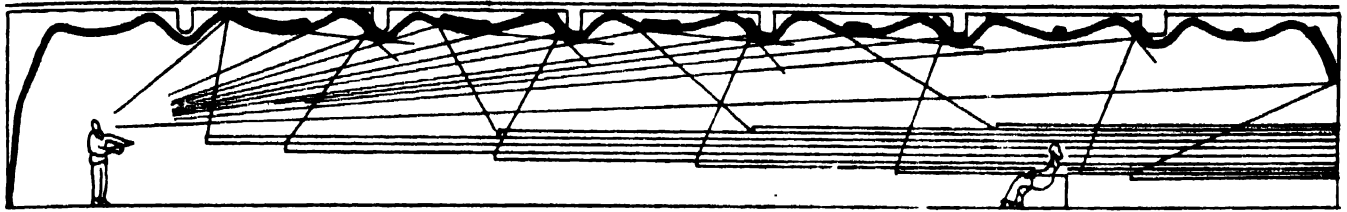
The Bayreuth theater more or less directly inspired some of the most important examples of theatrical architecture of the late 19th century and the early 20th, such as the theater of the Opera at Dresden, also built by Semper, and those of the Werkbund Ausstellung at Cologne (1914) and Paris Exhibition (1925) by Perret and Granet.

Some of the 19th-century theaters built expressly for symphonic concerts became famous for their acoustic perfection. The best known is the old Gewandhaus of Leipzig, a small hall seating 500 persons, in which Mendelssohn held his concerts from 1835 to 1846. The building was destroyed in 1894 and reconstructed on a larger scale with a view to recapturing and even improving its sound-reception qualities. Exact models, were prepared in order to determine the factors that might account for its superior acoustics.

The old Gewandhaus was a rectangular hall with the shorter sides slightly curved and the flat roof rounded to meet the walls.

It was a very small building ($37 \times 75 \times 23$ ft.), proportioned strictly according to a simple ratio (1:2) and to that of the golden mean (37×23 ft.). The construction, entirely of wood securely jointed, lent the hall something of the quality of a gigantic musical instrument. Structurally, the Gewandhaus was remarkable for its resonance, the fairly short reverberation

It was dug into an imposing natural recess in the mountains between Hollywood and the San Fernando Valley in California. Above the orchestra is a large sound reflector in the shape of a truncated cone. The distribution of sound energy is so accurately planned that there is very little decrease in intensity in the entire range of seats (FIG. 27).



Application of "guided sound" in a room of $108 \times 39 \frac{1}{2}$ ft. in the Viipuri Library (A. Aalto, architect). Horizontal zones indicate progressive increases toward the back of the room, obtained by reflection from the undulating ceiling, so that intensity remains constant and unaffected by the distance from the origin of the sound. The reflecting areas of the ceiling are reinforced (from Cassi-Ramelli).

period allowing for distinct staccato tones without any apparent deadening of sound.

All the qualities of the old theater were taken into consideration in building the larger hall that replaced it. Sabine, who had carefully analyzed the old Gewandhaus, suggested certain improvements in the hope that the new theater might serve as an architectural model. The ground plan is rectangular, the larger sides not quite 131 ft. in length, but the hall can accommodate 1,560 persons. The corners are all rounded and the flat roof is curved to the walls. The greater part is masonry, faced with large panels of wood. These architectural characteristics are undoubtedly the result of careful experimentation by the architects of Leipzig and an outgrowth of the musical development of that city. The Gewandhaus might be said to represent the greatest achievement of empirical acoustics before scientific research defined its problems.

Scientific progress in acoustics is primarily due to the measurement and analysis of auditory phenomena. Even though it continues to rely somewhat on empiricism, the science of acoustics has given architects an entirely new method of controlling sound phenomena in any environment and of altering them by the introduction of new elements. More than that, it has enabled the architect to plan his structure by using experimental models as a means of making acoustics an integral factor in the entire complex. The progress of architectural acoustics is substantially the work of Wallace Sabine (1847-1920), who first devised the coefficients of absorption and calculated the maximum time of reverberation that would give good reception in large buildings.

Sabine studied the acoustics of various American churches and specified the method of overcoming the commonest defects so that the minister's voice might be heard in every part of the church. He devised for the New Theater of New York a special canopy of absorbent material which was suspended from the ceiling and completely did away with certain troublesome concentrations of sound that had caused noise and distortion. (The large chandeliers in the 18th-century theaters probably had the same effect.)

The first planned experiment to determine what type of hall is best suited to sound reception was the construction of the great Salle Pleyel in Paris, built principally for symphonic concerts. Granet, the architect of the entire Pleyel palace, including two other auditoriums, engaged Gustave Lyon as his acoustics advisor. The result was at first rather disappointing, and vast alterations had to be made. Lyon was more successful in collaborating on the concert palace of Helsingborg, designed by the Swedish architect Swen Markelius. Above the podium of the orchestra is a large acoustic reflector, of irregular shape, which directs the flow of sound toward the auditorium and ensures uniform distribution. An example of noteworthy success in solving acoustic difficulties is the great open-air Hollywood Bowl, with a seating capacity of 22,500.

The researches of Walter Gropius have a special importance for the total theater, planned for Piscator in 1927 as a gigantic structure inspired by a new sense of theatrical spectacle, or at least by the new social significance attributed to it. In this theater a part of the orchestra was to revolve 180° , forming a ring of spectators around the stage, and the acoustic problem was to be resolved by a series of rings suspended from the roofing. In Gropius' plans for the auditorium and the museum of Halle, "the entire hall is nothing but a vast resonant shell around which rises a tall metallic frame that seems to transmit into infinite space the vibrations of what amounts to a colossal harmonic box or a huge musical instrument" (Argan, *Walter Gropius e la Bauhaus*, Turin, 1951).

Another very interesting experiment in mind is the famous lecture hall of the Viipuri Library (FIG. 29), the work of the Finnish architect Alvar Aalto. The hall has an undulating ceiling made of wooden staves so designed that in public debates each of the persons present might be heard perfectly by the others and might therefore have the sense of being on an equal footing with the principal speaker.

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Paolo PORTOGHESI

Illustrations: 4 figs. in text.

ADAM, ROBERT and JAMES. British architects born in Fifeshire, Scotland, the second and third sons of the architect William Adam (1689-1748). Robert (1728-92) was educated at Edinburgh High School and Edinburgh University. In 1754 he left Scotland for Italy, via France; in Rome he was admitted to the Academy of St. Luke and established a lasting friendship with Giambattista Piranesi. In 1757 he visited Spalato (Split) with C. L. Clérissieu and collected materials for his *Ruins of the Palace of the Emperor Diocletian at Spalato* (1764), which ranks high among the great archaeological publications of the period. In 1758 he settled in London, where he was joined by James (1730-94), an architect of ability though not of Robert's genius, and their youngest brother, William, who became business manager of the partnership.

In 1761, thanks to his compatriot Lord Bute, Robert Adam was appointed one of the two Architects of the King's Works, the other being the man who was to be his chief rival for the next thirty years, William Chambers. It was, however, in the sphere of private building that the brothers achieved immediate success. Country houses built to their designs from the ground up included Mersham-le-Hatch, Kent, and (for Lord Bute) Luton Hoo, Bedfordshire; among the much larger number of those remodeled or completed by them were Hatchlands, Surrey; Shardeloes, Buckinghamshire; Croome Court, Worcestershire; Osterley Park, Syon House, and Kenwood House, all in Middlesex; Kedleston Hall, Derbyshire; and Nostell Priory, Yorkshire. In London their most famous and conspicuous work was the Adelphi Buildings, built as a speculation in 1768-72 and almost entirely destroyed in 1936; of their privately commissioned London houses, only No. 20 St. James Square and No. 20 Portman Square survive unaltered. Their biggest public commissions were the Register House, Edinburgh, and Edinburgh University.

The Adams' architecture has generally been regarded as essentially neoclassical, although with its rich and delicate decoration it has little of the austerity typical of neoclassicism; recently, alternative interpretations of it as "frozen baroque" and as a disguised British version of rococo have been proposed (by E. Kaufmann and N. Pevsner, respectively). The brothers themselves, in the preface to their *Works*, described the changes that they had initiated as "a remarkable improvement in the form, convenience, arrangement, and relief of apartments; a greater movement and variety, in the outside composition, and in the decoration of the inside, an almost total change." The first and last of these changes may be put down to their knowledge of Roman planning and decoration, with an awareness of French practice in the case of the first; the second, of which a favorable reassessment of Vanbrugh's architecture was a concomitant, to the new feeling for the picturesque. The influence of the Adams on English architecture was enormous, and in the 1770s what has come to be known as the "Adam style" succeeded to the dominant position that had been occupied by Palladianism for nearly half a century. See ENGLISH ART.

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Marcus WHIPPEN

ADVERTISING. See PUBLICITY AND ADVERTISING.

AEGEAN ART. See GREEK ART, AEGEAN.

AERTSEN, PIETER, called "Lange Pier." Dutch painter of religious scenes and of genre in which still life plays a major role. Born in Amsterdam in 1508 or 1509 and died there in 1575. Aertsen began the study of painting in Amsterdam with Allaert Claesz, of whom little is known. When only 16 or 17, armed with introductions from the city of Amsterdam, he set out traveling, stopping first at Boussu Castle in Hennegau, famous for its collections of art. He spent some time with the Flemish painter Jan Mandijn and then settled in Antwerp about 1535. There he joined the painters' guild and in 1542 acquired citizenship and married. He trained many apprentices and painted prolifically both religious and genre scenes. An important commission of this period was the Crucifixion triptych painted for Jan van der Biest in 1546, now in the Royal Museum in Antwerp. After about twenty years, perhaps impelled by religious unrest in Antwerp, Aertsen returned to Amsterdam, was again made a citizen, and lived there until his death. During his last two decades he produced numerous religious pictures, many of which perished in the violent iconoclastic outbreak in 1566. Important works by Aertsen include: *The Butcher's Stall*, 1551 (University Coll., Uppsala); *The Egg Dance*, 1557 (Rijksmus., Amsterdam); *Christ in the House of Mary and Martha* and *The Cook*, both signed and dated 1559 (VI, PL. 69; Royal Mus., Brussels); *The Vegetable Seller*, signed and dated 1569 (Hallwyl Mus., Stockholm). (See V, PL. 294.)

Aertsen must be accorded an important place in the development of still-life painting, not only in the Low Countries but in Italy as well. His work was known and admired there and indirectly exerted an influence on Caravaggio and the 17th-century Spanish painters, especially Velázquez in his early *bodegones*. At a time when most of his contemporaries were fascinated by Italian art, Aertsen clung to the Netherlandish tradition that had always favored still life, giving it even greater importance (see FLEMISH AND DUTCH ART). He was also one of the first to draw his subject matter largely from the lives of peasants and working people (see GENRE).

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Margaretta M. SALINGER

AFGHANISTAN. The name Afghanistan appears for the first time in al-Birûni's book on India (I, p. 208, Sachau ed.) and is used by his contemporary, al-Uthi. Alfred Foucher proposed to recognize it in the Chinese form, A-p'o-Chien, used by Hsüan Tsung and already related by A. Cunningham to the Afghan races, as well as in the Sanskrit *Āvagāna* or *Avagāna* of the *Bṛhat-samhitā* (XI, p. 61, and XVI, p. 38; cf. A. Foucher, *La vieille route de l'Inde de Bactres à Taxila*, pp. 235-52). It was not until 1747 that Afghanistan became a political unit to the extent of forming a confederation of diverse races under a single sovereign, Ahmad Shah, who undertook to continue the activities of Nadir Shah, whose officer he had been. Only from this time can one speak of a true Afghan history corresponding both to the effective unity of the country and to its political importance, although in preceding periods, because of its position and geographical configuration, mountainous in the north and semidesert in the south, the region was the scene of meetings and contacts between the most diverse civilizations of Eurasia.

SUMMARY: Period divisions, geography, and history (col. 32). Artistic development in relation to history and topography (col. 34). Centers (col. 41): *Protohistoric; pre-Islamic; a. Bactria; b. Bamian group; c. Kapisa; d. Shotorak, Hadda, and other minor sites; e. Kabul and the great Islamic cities.*

PERIOD DIVISIONS, GEOGRAPHY, AND HISTORY. Apart from works and documents that are mainly of ethnographic value, the rich artistic and archaeological patrimony of Afghanistan may be divided into three principal historical periods: pre- and protohistoric, pre-Islamic, and Islamic. This division separates into periods the complex history of those peoples who contended for the domination of the country. It may seem artificial, since it passes over or oversimplifies important historical events, but in reality it is the only possible division, since it is based on the most salient points of reference: the beginning of history and the flood of Islam. Any other method of division would be even less clear, since, as we have seen, despite the splendid interlude of the Ghuri, Afghan history in a strict sense began only in 1747.

The Afghan territory is situated between two worlds, different but with equally flourishing civilizations — Iran and India. From earliest times it seems to have been a region of interference and encounter, often forming a path between the two. The world of the nomad shepherds to the north exerted a constant pressure on the settled agricultural civilizations to the south. This barbarian thrust, directly and through its ultimate effects, constituted one of the most important factors in the development of the Afghan territories, as of other border lands. The geographical proximity of these different worlds, nomadic, Iranian, and Indian, distinguished the different Afghan provinces not only in their political history but in their art as well. The western regions were more directly affected, especially in the Islamic period, by the Iranian development. The eastern regions, neatly divided by the chain of the Hindu Kush into two distinct sectors, had a variable history and artistic consistency. The area to the north of the Hindu Kush looked toward central Asia and the world of the nomads, and participated in its history. That to the south entered instead into the historical evolution of India, partially determining its course, especially that of the northwestern area and the Indus basin. In practice, the southern region of Afghanistan was a direct path through which the echoes and repercussions, often disastrous, of the recurrent disturbances of the Eurasian balance reached the provinces of India.

The regions north of the Hindu Kush, rather than those to the south, which have a very different history, became a civilizing filter for the nomadic hordes that invaded India. The network of great roads — traces of which are obviously related to the geographical configuration of the country — had a great importance, not only for the historical development but also for the artistic evolution of Afghanistan. The Silk Route, which for centuries remained the most important transcontinental artery from the Far East to the Mediterranean basin, was continued in the principal caravan route of India, and helped make Afghanistan the meeting place of diverse civilizations, migrations, and historical phenomena often of remote origins.

The line of the caravan road from India through Bactria to the regions beyond the Oxus (Amu-Darya) was the principal controlling factor. In some places it was practically the obligatory route of transit for many of the invaders who assailed India from the north. It was also the principal route of Buddhist evangelization in central Asia and China. Because of its geographical position and its network of roads, Afghanistan was regarded as an area of security against the Indo-Iranian empires, starting with the Achaemenids and Alexander the Great. The strategic protection of the roads of trade and commerce from Iran to India across Scistan and Baluchistan can be assured only along the line of the Oxus; for this reason, interfering civilizations and frontier states arose on the other side of the line. Many of these were characterized by the "meeting" of very different worlds, such as the nomadic and the settled (cf., for example, the culture of the "towns of the inhabited walls" peculiar to Khwarizm).

The history of Afghanistan thus followed constant laws deriving from the confluence of diverse interests. The fate of the Iranian empires was often decided by the possession of the Oxus line. Consequently there were frequent military penetrations from the west, accompanied by a flow of customs, manners, and people. These rapidly changed the countenance of Afghanistan and transformed its civilization. Such was the case with the Sassanian conquest, the Achaemenid, and, in its own way, the Hellenistic. The rise of an Indian power of imperial rank, the Maurya, resulted in a thrust from the south, since it brought to the Afghan regions the conflict between Hellenism and Indianism. The emergence of the Indo-Greek and Greco-Bactrian kingdoms marked the start of an isolated Hellenism which acted as a civilizing filter for the barbarian hordes from the north. It also marked the beginning of the formation of political and military powers in eastern Afghanistan, which moved from this

region on the one hand toward central Asia, and on the other toward India. Later, the Kushans, more than any other tribe, spread out from these and contiguous regions to form a vast empire. To summarize: every movement that came from the west had as its objective the total conquest of Afghanistan and of the adjacent regions of India, whereas for movements from north to south the Afghan territory tended to serve as a zone of transit. These general characteristics do not exclude either a continuous cultural penetration from the south (that is, from India), or the formation of states that depended mainly on the eastern regions of Afghanistan as the cradle and heart of their dominions.

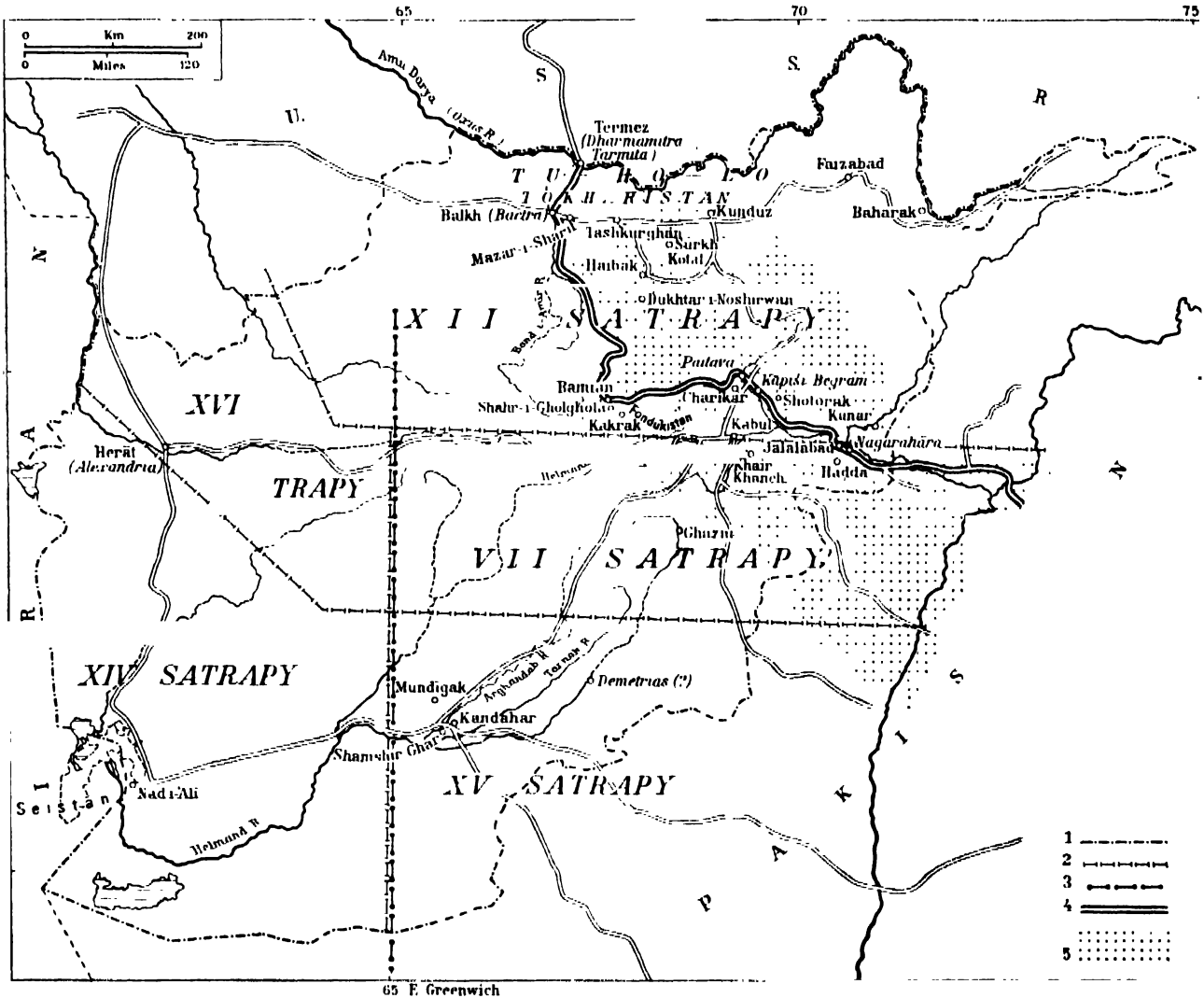
The distribution of monuments and artistic production are affected by the permanent factors of geography and by the very position of the country, which makes it the focal point for the ever-shifting Eurasian political balance. The great caravan routes of India, China, and Iran, and at times the route from the classical world of the Mediterranean as well, passed through Afghanistan, and it can readily be seen that a number of influences were brought to bear upon the area. It should, however, be remembered that for a brief period the eastern part of Afghanistan belonged to the immense Kashmir empire, which passed through a phase of singular prosperity and dominated the small Turkish potentates of the area. A little later, the expansion of Islam toward the east met remarkable resistance from the Turkish shahs of Afghanistan, initiating a rather obscure historical period that saw the clash of Chinese power, supported in part by small local potentates, with Arab-Islamic power. Although by this time Arab-Islamic power had passed its phase of greatest expansion, it contributed to the elimination of Chinese domination in central Asia. In general, the regions along the frontiers or touching the western borders of the Indian peninsula tended to break up, to separate from the rest of the Islamic world, and to gravitate toward central Asia. From this derives the isolation and absolute security of the Indian territories, so complete that at first the Islamic advance proceeded slowly in the face of the very obdurate resistance of the Turkish states. These states stimulated a renewal of Buddhism in the regions they dominated, and their resistance was broken only in part by the fall of Kabul (A.D. 870). The rise of the Ghaznevid dynasty in 962 destroyed the precarious balance that had kept India isolated and her frontiers inviolate. It was not the founder of the dynasty, Alp-tegin, an Islamized Turk, who took over the political line of the Afghan powers gravitating toward India, but one of his successors, Mahmud of Ghazni. The Afghan conqueror's pressure toward the south initiated the first extended contact between Islam and Hinduism, a contact that was violent and often stained with episodes of fierce intolerance. This opened a new phase in the history of India. Mahmud of Ghazni asserted himself in Transoxiana (Sogdiana) and occupied Bukhara. He also transformed Ghazni into a great cultural center and extended his dominions as far as the Ganges region and Gujarat. Then, the fortunes of the Ghaznevids declining, the pressure of the Seljuk Turks from the north limited the extent of the territories they dominated to Afghanistan and the Punjab. The revolt of the Ghuri again brought Afghan forces to bear heavily upon India, not only with the conquest of Lahore, the last Ghaznevid stronghold, but with a somewhat deeper penetration than marked the apogee of the Tajik of Afghanistan. Still later, moving from central Asia, the pressure of the great shahs of Khwarizm assailed Afghanistan in the person of Ala ed-din Mohammed (1200–20), who thus avenged the conquest of Herat by the Ghuri. The Mongol tempest, led by Genghis Khan, swept away the shahs of Khwarizm and inundated Afghanistan in 1221: Balkh, Merv, Ghazni — where a futile resistance was attempted — and Herat were destroyed. Nothing remains of these great cities; the history of the Afghan regions becomes a provincial episode in the immense extension of the Mongol empire. But the slow Iranianization of those heirs of Genghis Khan who ruled his Iranian and Afghan territories produced a renewal, first under the Buddhist Hulagu, then under Ghazan and Uljaitu. The Turkish wave of Tamerlane again destroyed the Afghan centers, even though it was led by a cultivated and refined Moslem, and swept away the small states that had emerged after the decline of the Hulagu family. Among these were the domains of the Afghan dynasty of the Kurds. The heirs of Tamerlane, the Timurids, bore heavily upon India and stimulated extensive cultural phenomena. The invasion of Baber, Timurid sovereign of Afghanistan who founded the Moghul empire, brought southern Afghanistan into the empire, while the northern regions fell under Iranian domination and were continually threatened by the Uzbeks. Thus we reach modern Afghan history, which has been homogeneous and coherent, though even in modern times Afghanistan's artistic development has been continually exposed to diverse influences.

ARTISTIC DEVELOPMENT IN RELATION TO HISTORY AND TOPOGRAPHY. For the pre- and protohistoric period, the artistic topography of Afghanistan is limited to a few experimental excavations in several

sites. It is thus not possible to arrive at a detailed and exact picture, even though interesting data are not lacking. The most important center discovered to date, Mundigak, located north of Kandahar, was progressively transformed from a semipermanent habitation at the end of the 4th millennium to a village upon which were later superimposed three monumental buildings for collective use. Analysis of the finds shows that beginning with the seventh stratum, local forms appear, perhaps derived from Tepe Hissar II B (Iran), but with decorations coming instead from Kulli and other Indian centers.

arrowheads with "laurel leaves") and strong influences not from Iran but from Anau and southern Russia. Evidence for this is found in the ornament and in the ritual form of the vases with long spouts.

Protohistoric documentation confirms the view that the present Afghan territories were the scene of the meetings of diverse cultures and civilizations from at least the 3d millennium B.C., without excluding local elaborations. But aside from these general indications, we cannot learn much from the distribution of the materials, knowledge of which is based on limited investigations. However, the finds



Afghanistan, showing principal centers and areas of art-historical importance: (1) Modern boundary; (2) Probable extent of the Achaemenid satrapies; (3) Probable limits of the Seleucid and Maurya dominions; (4) Bactra-Taxila caravan route; (5) Area of greatest concentration of finds of Gandharan and post-Gandharan art.

Small objects, such as seals of Iranian inspiration, were found in the monumental buildings of the upper strata, along with architectural motifs that are perhaps of Iranian derivation, and pottery decorated with motifs from Baluchistan. The final structure, considerably later than the two preceding, shows the adaptation in the 1st millennium of architectural forms peculiar to Harappa (see INDUS VALLEY ART) in the characteristic granaries with an upper trap door as the only opening. Since this building was constructed by people other than those who built the preceding one and only after the site had been abandoned, it is possible that it can be ascribed to an influx of population from the Indus Valley — a possibility of exceptional interest.

like Deh Morasi Gondi, another Afghan center, a figurine of the Great Mother analogous to those of the upper valley of the Zhob, which confirms the position of these territories as a path between India and Iran from the earliest times. Elsewhere, the excavations of Nad-i-Ali present very interesting remains from a later period, indicating both a Scythian invasion (three-lobed

confirm the importance of the Afghan territory as a region of interference and encounter.

The beginning of the historical period occurs, for all practical purposes, with the Achaemenid domination, which divided the territory into various satrapies. Only Bactria remains, as a satrapy, an organic recognizable entity comprising territories not at present in Afghanistan. Except for the treasure of the Oxus (see BACTRIAN ART) and the pottery of the more recent period of Nad-i-Ali, which seems to be of the Achaemenid type and epoch, precise documentation of the period is lacking. However, artistic development is affirmed by discoveries made outside Afghan territory (Altai and Khwarezm). Deposits of coins are proof of the commercial activity that characterized the region. It is possible that the small punched-out bars used for coins are of local rather than Indian manufacture (treasure of Kabul, Saman-i-Hazuri) and that the false "darics" of gold, generally believed to be Indian, were coined in Bactria, which would imply the existence of local mints. Archaeological documen-

tation of the epoch of Alexander and the Seleucids is also almost entirely lacking, even though there were four great cities in Macedonia, including Herat (the Alexandria of Aria, Artakoana). During the period of the Seleucids, the presence of one of their mints in Bactria seems certain. However, we can assume from this only that Bactria was a center of monetary output in different epochs and regimes, because of its proximity to Asia, its importance as a center for traffic with Asia, and its mineral riches. Undoubtedly the presence of a foreign technical-artistic organization as early as the time of the Achaemenids influenced the cultural evolution of the region. With the Indo-Greeks and the Greco-Bactrians, the eastern regions of Afghanistan, centered around Bactra, Kapisi, and Nagarahara, became a Hellenistic area touching Transoxiana in the north and extending to wide areas of the Indus basin in the south. It was this Hellenistic base, only partly in Afghan territory, which produced that meeting between classical art and Buddhism which takes its name from the region, Gandhara.

Nothing remains of the Greek works except the magnificent coins certainly designed and struck by Western artists and artisans working in the Indo-Greek and Greco-Bactrian mints. To them we owe the first extensive use on coins of a nonidealized type of portrait of the sovereign. The topographical distribution of the coins of Greek sovereigns in Afghan territory, studied by J. Hackin, may indicate, on the basis of the percentage of discovery, the extent and distribution of the dominions of the various sovereigns, but only within very narrow limits and with wide hypothetical margins. The presence of Oriental symbols and of tutelary gods such as those of Bactra, of Kapisi, and of Dionysopolis (Nagahara?) proves that the coins reflect local cults and refer to known urban centers. Apart from their historical value, these data, with their mixed iconography, indicate a first fusion between Hellenism and the Indo-Bactrian world, a phenomenon that characterizes the whole region dominated by the Greeks and not Afghanistan alone. The numerous monograms used in the Indo-Greco-Bactrian coinage seem to refer to the artists and technicians rather than to topographical facts.

With the establishment of the Kushan domination, the topographical distribution of Afghan monuments assumes greater value. The regions east of the line joining Bactra to Bamian are an integral part of the area of expansion of Gandharan art. Conquered by the Buddhist dispersion, which traveled along the great road toward central Asia, they are immensely rich in sculptural and architectural works. There are many monuments of a devotional nature, which sometimes reach high esthetic levels but which more often are of a workmanlike, almost industrialized character, especially in the second period, in which ornamental sculpture in stucco predominates. Both phases are documented in Afghan territory by numerous works of high quality. The area covered by the Greco-Romano-Buddhist school corresponds in large part to that of Greek domination. For this reason, it is possible that the origins of the meeting between classical art and Buddhist thought must be sought in Bactria, though even today no proof of this has been found. On the contrary, excavations carried on at Surkh Kotal in Bactria by the *Délégation archéologique française en Afghanistan* revealed another component, of no negligible importance in the formation of Gandharan art: the Kushan influence. The stylistic analogy between some of the images of Surkh Kotal and others found at Murtara demonstrates that the ruling races had an official art, inspired by tendencies which were utterly opposed to the classical and which showed a preference for rigid and frontal forms that may be defined as Kushan. The localization of these images in Afghanistan suggests the taste of Kushan as one of the elements that created the Gandharan language. The presence of similar images at Mathura (modern Murtara), which is outside the area covered by the Gandharan school but within the borders of the Kushan empire, enables us to reconstruct with certainty the existence of a Kushan contribution to this art. Hence it is not necessary to trace back to a late imperial imitation coming from Rome the mass of these anticlassical traces in Gandharan art that have made us think of an evolutionary analogy between Gandharan art and Roman art of the Julio-Claudian age even more than of the Tetrarchate. Indications from Shotorak and from the region of Kapisa exhibit the anticlassical current, with its predilection for frontal images, rigid figures, and symbolic alteration of proportions which reaches its height in the Afghan territory itself. We may speak of a current of Kapisa, extending as far as Shotorak and probably elsewhere, which prefers "atele" compositions with a dominant single image over all others; these are distinguishable from extra-Afghan production even in the subjects chosen: the miracle of Śrāvastī and episodes concerning the Buddha Dipamkara. Such a current, streaked with strong mystical elements, influenced Chinese art of the Wei dynasty (see CHINA). On the other hand, Kushan taste does not differ very much from Parthian-Iranian taste, which makes it difficult to isolate from these scattered elements a few that are of Parthian derivation.

The discoveries of Surkh Kotal alter the northern limit of the area of production in stone, and the works of Airtam Termez are thereby reabsorbed into this area. The geographical limits of stucco production, on the other hand, cannot be defined, since they extend far into central Asian territory. Kunduz presents examples of all the different stucco techniques. Bamian and the region of Kabul, however, even today mark the southern limits of the central Asian technique of stucco mixed with chopped straw, wool fleece, and horsehair.

The discoveries of Begram occupy a place by themselves. Examples of Romano-Egyptian and Romano-Syrian glassware, Hellenistic bronzes, and plaster "exemplaria" (casts for metalwork) of very high quality, probably Alexandrian, are found along with Indian ivories and Chinese lacquers. This rich find must somehow be connected with the traffic of the caravans; it may have been a storehouse of works of art or perhaps a collection acquired with toll revenues. The works in question do not all seem to belong to the same epoch; the very high quality of the "exemplaria" recalls the splendid Alexandrian production of about the 1st and 2d centuries B.C. However, the finds of Begram show that Afghan territory is among those areas containing important repositories of classical art, and for this reason it is linked, through its bronzes and its beautiful glassware, as well as its plaster casts, to the classical world of Greece and Rome. Geographically, Begram marks a stage in the dissemination of classical art which is of great interest and importance even though the objects were carried there by caravans rather than locally produced.

It is not now possible to affirm or deny the influence of these particular works on Gandharan art, which certainly received nourishment and inspiration through the traffic between the Kushan and the classical worlds. On the other hand, as we have seen, from Afghan territory emerge not only indications and evidences of the activity of Indian ivory workers, of which there were very few in India or elsewhere, but also rather rare examples of Chinese lacquers. It follows from this that the Afghan archaeological patrimony is enriched by classic Indian works and, in a more limited way, Chinese, retaining, however, that character peculiar to a region subject to diverse influences because of its geographical position and the great caravan routes.

The architectural production of the Gandharan school in Afghan territory reveals few innovations or local variations. The form of the stupas is normal for the school; characteristic structural elements, such as round towers and windows resembling loopholes in the shape of arrowheads, are spread over territories much wider than Afghanistan, even though imposing documentation of them is found there. The loophole windows, previously used by the Achaemenids, perhaps came from Khwarizm into the Kushan world, from here extended even to Miran in central Asia (mural paintings of *Vivantara Jataka*), and persisted in Iran both under the Parthians and under the Sassanians; the round towers, plentiful at a later time and often used as corner reinforcements, are found all the way from Transoxiana through Shotorak and Begram and as far as Taxila beyond the Indus. Probably of Roman origin, they may have been diffused from the south. In later epochs, similar phenomena were better localized in Afghan territory, where clearer documentation of them is found, but they are also found in outlying areas.

The Sassanian invasion, which destroyed the power of the great Kushans, overran Afghan territory almost completely; Surkh Kotal, Begram, and perhaps even Shotorak still bear traces of the destroying fire of the conquerors. R. Ghirshman notes traces of the same destruction in non-Afghan centers such as Tali Barzu, Kaga-i-Mir, and Kai Kobadh and attributes to the same cause the end of Airtam Termez as a great Gandharan center. There was a renewal of Sassanian influence, somewhat debased, and almost immediately a new type of molded pottery, well documented in both the third stratum of Begram and at Shotorak, was diffused. We find traces of it in different forms even at Shamshir Ghar. From all historical points of view, the period following the Sassanian invasion is extremely complicated and obscure. There was a period called "Kushano-Sassanian," a Kushan revival whose exact duration is not known (Ghirshman's "third dynasty"), and the period of the Kidarites, the chronology of which is rather controversial. The practice of decorating with stucco flourished in this tormented epoch; consequently, there was a revival of classical-Hellenistic forms, and examples of Kushan taste were reduced to a few mainly pictorial works, if frontal schemes are considered to be survivals and adaptations foreign to the Sassanian world. Coins were no longer of characteristic Parthian-Kushan types but became thinner and larger in diameter. This phenomenon extended even to Khwarizm and, taken together with the pottery, certainly denotes an economic and cultural dependence on Sassanian Iran. The presence of inscriptions in the modified Greek alphabet peculiar to the Kushans does not prove that there were mints in Afghanistan, though there probably were. The use of corner squinches in some buildings, for the transition from the square ground plan

to the round base of the dome, is undoubtedly a structural element of Sassanian origin. However, the squinch is sometimes replaced by various devices such as the misused triangular stone slabs found in Gandharan architecture. Somehow, the use of squinches spread from Afghan territory into central Asia, where it persisted for a long time. It is even found as far east as Tunhwang (Tun-huang), where its forms are no longer functional but rather conventionalized and decorative. Architectural constructions of octagonal plan, of Romano-Byzantine derivation, are also the result of Sassanian influence. These seem to be confined to the Afghan area (Bamian provides an example), though the octagon as a geometric decorative form, found on the domes of Bamian, and as a base for a dome buttress in the stupas, is also diffused outside Afghanistan.

During the Sassanian domination, the Afghan territory offers, in addition to the many examples of stucco decorations, related iconographically and stylistically to those of Taxila, a unique pictorial documentation. Dukhtar-i-Noshirwan presents a complex of mural paintings of Iranian-Sassanian type and inspiration. They explain the origin of the paintings adorning those sacred buildings at Bamian which belong to that current, describable as Iranian-Buddhist, which had wide repercussions in central Asia. Typical Sassanian iconographical and symbolic motifs are misused in compositions with Buddhist subject matter. The classical tradition, which survived especially in stucco work, gradually gave way to an overpowering Iranian influence that was met in Afghanistan by Buddhism. The prevalently frontal treatment continues, as does the rigid handling of the human figure not unlike the Byzantine, which brings to mind the images of Kapisa and therefore the Kushan tradition (the painted Buddha of Hadda, the line of Buddhas alternating with stylized stupas in the entrance hall of the sanctuary of Group C at Bamian). In addition, there are also figures of Indian inspiration (for example, the medallions in the niche of the 175-ft. Buddha at Bamian).

The birth of the Iranian-Buddhist current in Afghan territory is not the only phenomenon that seems, in the present state of research, peculiar to this area. After the Kidarite period and the destructive interlude of the Ephthalites—or White Huns, traces of whom seem to have been found in two different localities—there arises, in the division of the territory into local principalities, a new current which we shall call, with R. Grousset, "Sassanian-Gupta," a term that defines the nature of the Indian influence. The paintings and the beautiful sculptures of Fondukistan near Bamian reveal the existence of a refined style apparently closely related to that of central Asia, whether in the Tarim basin or, if the elongation of comparable figures in the statues is taken into account, in Sogdiana (Pjandzikent). According to Grousset these works, which later studies have dated 6th to 7th century, are characteristic of Fondukistan and influenced developments in central Asia. However, because of the analogy with the works of Pjandzikent, there is some doubt as to the truth of this hypothesis.

The flowering of Fondukistan slightly precedes the Arab invasion and the Islamic period, which gave to the art and history of the Afghan territories an entirely different countenance. It will be recalled that during the Kashmir empire of Candrāpīḍa and Lalitāditya, sovereigns of the Turkish shahs of Afghanistan, late Gupta currents flowed into the region. This influence seems to have inspired the famous Scorretti marble representing a Mahisamardini, a local imitation of an iconographical type peculiar to Hindu art of the late Gupta school. As H. Goetz states, this marks the extreme western limit of the religious images of Hinduism which had previously reached Kunduz, as is proved by the Herakles-Siva discovered there.

In conclusion, during this first period, the geographical and historical position of the Afghan territories probably made them the cradle of characteristic meetings and specific currents, both when the political balance favored Iran and, subsequently, when the territory was in direct contact with India through Buddhism. Consequently, one encounters an artistic development in Afghanistan different from that of the regions to which it was linked in the Kushan period. Its bond with central Asia led to a wide diffusion of those currents which can be defined as originating there.

This lasting tie with central Asia was also important to the artistic evolution of Afghanistan during the Islamic period. Those regions to which it was linked in the Kushan period represent the area of expansion of the central Asian styles and the place of origin of some of them. The contact of the Islamic culture of these regions with the local Indo-Iranian background exercised a clear influence on nascent Islamic art, as can be seen in some works of silver plate of uncertain origin, which are clearly Islamic adaptations of central Asian, or, if you prefer, Indo-Iranian, reminiscences. During the three centuries from the beginning of the Moslem epoch to the foundation of the Ghaznevid dynasty, Turkish domination persisted. The Turks were responsible, as we have seen, for the creation of monuments that bring about a belated meeting between post-Gupta Indian and late Sassanian art.

With the rise of the Ghaznevid dynasty, there were large-scale influxes of central Asian art in Buddhist guise. This is proved by the rows of guards armed with maces painted on the walls of the entrance hall of the Ghaznevid palace of Lashkari Bazaar. These rigidly frontal stylized images recall the lines of donors found all the way from Bamian to Tunhwang at the extreme eastern limit of the Serindia. On the other hand, contact with India and the impression made on the Afghan conquerors by its immense buildings spurred the art of the Ghaznevid court to imitation, which, disregarding the spirit and the form of the works, is evident in the material used (marble), in the dimensions, and in certain details. It is in the tomb of Mahmud of Ghazni himself that the first Indian reminiscences and derivations appear. The Ghaznevid currents influenced the art of the Seljuks (q.v.), which diffused its characteristics over a rather wide area but which is, however, fundamentally Iranian, although it also contains foreign elements, some of which are even of Far Eastern origin. Some recently discovered marbles in the Ghaznevid style still reveal late Sassanian elements. In contrast, the wooden portal of the tomb of Mahmud of Ghazni displays ornamental tendencies analogous to Fatimid examples of the period, which proves that Islam undoubtedly had a unified esthetic.

With the Seljuks, the eastern region of Iran especially exhibited great artistic creativity, so that it was natural for the bordering Afghan territory to become a cultural dependency of Iran itself. This territory acted as a path to the eastern regions for the diffusion of Iranian creations, and it maintained this position even in the Timurid period. On the other hand, except for the pictorial school of Herat, which is important more for the greatness of its personalities than for its stylistic coherence, it cannot be said that all artistic phenomena of the Afghan territory are related to the geographic factor. Although the flowering of Herat was due to its very favorable atmosphere, its importance was fully realized only in the 15th century with the innovations of Bihzād (q.v.), the founder of a realistic and rational pictorial style that expresses the Safawid national tendencies better than any other.

Naturally this does not negate the fact that great works of Islamic art are found in Afghan territory and that these document the development of Iranian art of the Moslem epoch better than other, less peripheral works. However, notwithstanding some local evidence, Afghanistan's local physiognomy was less definable and clear in the Islamic epoch than during the preceding period in the sense that the documented artistic phenomena are not stylistically independent and often refer to areas of even greater remoteness than those of the Kushan or post-Kushan monuments found in the same places. Islamic-Iranian culture is so predominant that it does not permit the Afghan centers and their extensions to the east to manifest much independence.

It is well to note at this point that Herat was important for other things in addition to its pictorial school, which has already been mentioned. It was also a center of production of fabrics and carpets that are easily distinguished by their particular stylistic characteristics, and in addition it possessed architectural monuments of extreme interest, such as the musalla, the madrasah, and the Mausoleum of Jawhar Shad. However, these local examples are basically only rather pleasing expressions of the Iranian esthetic sensibility in various epochs. The absorption into Iranian culture is complete.

A single peculiar phenomenon that seems to have an exact geographical and topographical reference, although our slight knowledge does not permit us to define its importance, is the great technical progress and esthetic sensibility of Islamic architecture of Seistan compared to that of the northern Afghan regions in the Ghaznevid period. But these data, based mainly on the Towers of Mahmud, are rather uncertain.

As for modern Afghanistan, in addition to some buildings of the early decades of the 20th century, many monuments and urban developments repeat the Western international style of recent decades, a style that still awaits a local reworking to make it a true expression of the taste of a people only now beginning to be aware of its past and its traditions.

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1936, which offers only a few pages on history and culture but contains a selected general bibliography. For the extension of Hindu iconography and art in Afghan territory, a subject which presents notable unknowns but which is of great interest, cf. H. Goetz, *Late Gupta Sculpture in Afghanistan*, the "Scorretti Marble" and Cognate Sculptures, *Arts Asiatiques*, IV, 1937, pp. 13-19.

CENTERS. Protohistoric. Nad-i-Ali. Small village with an Islamic citadel. At the base of the citadel are the extensive remains of a large city destroyed by Tamerlane in 1384. The protohistoric habitations were found covered with two tumuli called Surh Dagh (the red hill) and Safid Dagh (the white hill). Excavations conducted by R. and T. Ghirshman in 1936 determined the existence of two periods of occupation, the second probably of the Achaemenid epoch. The duration of the first was surely longer than it was judged to be on the basis of the excavations of the Ghirshmans, who were not able to touch virgin soil.

Deh Morasi Gondi. Site excavated by the American mission. Located in the Arghandab basin. It contains much pottery important for its relationship in both form and ornament to that of localities outside Afghanistan.

Mundigak. Locality north of Kandahar, discovered in April, 1951, by the French mission of J. M. Casal. Two large tumuli covered the remains of protohistoric habitations. The larger (Tepe A) presents 13 strata; the smaller (Tepe B) has not yet been completely excavated. Its pottery displays a somewhat different character, consisting of undecorated gray "wine-glass" vases. For Tepe A the carbon 14 test carried out on some remains of burnt wood from Stratum V gives an uncertain date around 262 B.C. Bronze appears in Stratum VI, and relations with Quetta are documented in VII.

BIBLIOG. R. Ghirshman, *Fouilles de Nad-i-Ali*, RAA, 1939, p. 20; V. Walter Fairervis, Jr., *Preliminary Report, American Museum Novitates*, no. 1587, 1932; J. M. Casal, *Quatre campagnes de fouilles à Mundigak*, 1951-54, *Arts Asiatiques*, I, 1954, pp. 163-78; J. M. Casal, *L'Afghanistan et les problèmes de l'archéologie indienne*, *Artibus Asiae*, XIX, 1956, pp. 213-20.

Pre-Islamic. a. Bactria. Bactra (now Balkh, FIG. 42). Eratosthenes (cf. Strabo, XI, 514) mentions another name, *Zariaspa*, perhaps from Azar-i-Asp, a name referring to the great fire temple located here. (Ptolemy, VI, 11, 7, distinguishes Bactra from *Zariaspa*.) Traditional cradle of Zoroastrianism, it was undoubtedly a large city, having in the time of Euthydemus, the Indo-Greek ruler, a somewhat Hellenized though composite appearance due to the presence of a temple of Anahita, an Iranian divinity who was especially connected with the city. However, excavations have revealed little because of the ruin of the accumulated strata in the crumbling of the remains. A. Foucher's contention that "there is only Balkh in Bactria" has been in part confirmed by the experiments carried on by D. Schlumberger.

Ruins of a Buddhist stupa, probably of the time of Vasudeva (Tepe-i-Rustam), are found outside the city, and there are also other Buddhist ruins in the vicinity.

The history of Bactra continues in the Islamic epoch: plundered by the caliphs and then the seat of local potentates who were at times very powerful, it was destroyed by Genghis Khan in 1221. Marco Polo mentions it by the name of Balac, and in the time of Tamerlane it was one of the largest cities of Khorasan. Today there remain two encircling walls one within the other, both from the Moslem epoch. The most modern, which runs for a good distance alongside the older one, widens to enclose a large part of modern Balkh. In the oldest part, there is an enormous fort (Bālā Hissār) which culminates in a citadel, Arg.

The arch of the ancient madrasah of Seyed Shha Kuli Khan, the mosque facing it, the remains of the caravansary, and the Green Mosque, perhaps from the 15th century, like the many ziaras, still await study by a specialist in Moslem art and archaeology.

BIBLIOG. A. Foucher, *La vieille route de l'Inde de Bactres à Taxila*, Paris, I, 1942, pp. 85-121; II, pp. 373-77; D. Schlumberger, *La prospection archéologique de Bactres* (printemps 1947), *Rapport sommaire*, Syria, XXVI, 1949, pp. 173-90; also J. Hackin, *L'oeuvre de la Délégation française en Afghanistan*, 1922-23, I, *L'archéologie bouddhique*, *Maison franco-japonaise*, Tokyo, 1933.

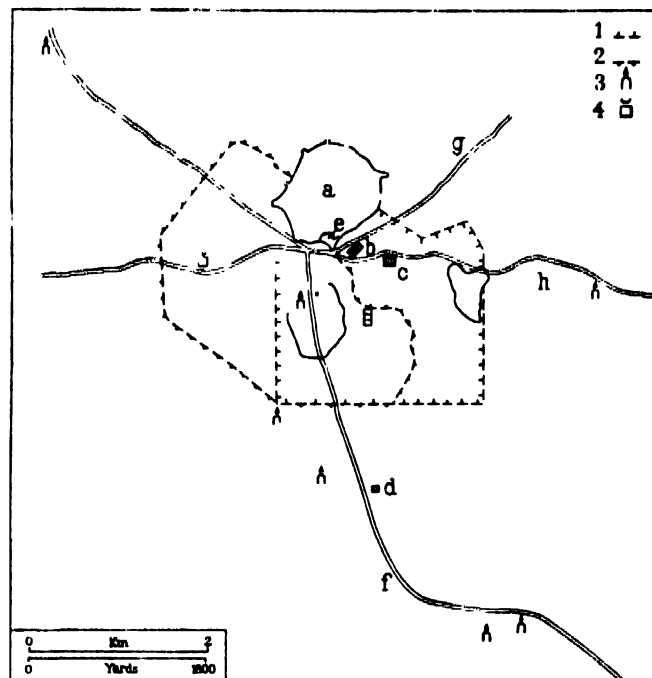
Surkh Kotal (the red hill). Site relatively near Mazar-i-Sharif, made famous by the discovery of a large fire temple and other buildings. The magnificent temple with its enormous flight of steps reveals a mixture of classicizing and Kushan elements, as in Gandharan works, but in this case the intermingling took place under the influence of a different religion, evidently of an Iranian type. Bases of Hellenistic columns engraved with the characteristic Kushan sign flank stylized images also Kushan in character, as a comparison with Mathura confirms. The temple was destroyed by the Sassanian

invasion at an indeterminate date, probably under Shapur I (but D. Schlumberger thinks Ardashir I). See Plate II, 86.

Opposite the temple staircase, about a mile and a quarter to the east, a rectangular monument generally described as "the statue platform" contains the remains of colossal statues in clay with plaster revetment. This is probably a Buddhist monument of relatively late date. It bears an inscription which has not yet been deciphered.

BIBLIOG. D. Schlumberger, *Le temple de Surkh Kotal en Bactriane*, I-III, JA, 1952, pp. 433-53; 1954, pp. 161-205, pp. 269-79. For all these localities, see also BACTRIAN ART.

Kunduz. Small city whose name derives from Kuhandiz or Kohandez (the ancient fortress). Now supplanted by Hanabad, it was the ancient capital of Tokharistan (Chinese Tu-ho-lo). About two miles away, a monastery excavated by J. Hackin shows cells covered by hemispheric domes with characteristic Iranian solutions for the transition from the square ground plan to the round base of the dome. Some stucco heads discovered by Hackin have Hellenizing forms in contrast to others of a more peculiarly local type. The expedition



Bactra (Balkh), plan of the city: (1) Extent of the ancient city; (2) Extent of the modern city; (3) Buddhist monuments; (4) Islamic monuments. Individual monuments and streets: (a) Bālā-Hissār fortress; (b) and (c) Caravansaries; (d) Tepe-i-Rustam; (e) Arg; (f) Ancient caravan route from India; (g) Street of the baths; (h) Street of Mazar-i-Sharif. (A. Foucher, *La vieille route de l'Inde de Bactres à Taxila*).

of E. Barger and P. Wright brought to light the bases of three Hellenistic columns similar to those of the temple of Jandial at Taxila, demonstrating a unified stylistic background with strong Western characteristics which extended from Bactria to the Indus and beyond. Some pieces found later reveal the existence of an iconography that differs from the rest of the school. A figure of Herakles-Siva with four arms and three heads and wearing a lion skin reveals that Western elements infiltrated the Saivist iconography of the area. Data concerning these pieces have not yet been published. In Kunduz the use of loopholes in the shape of arrowheads is again common. The treasure of the Oxus was found two days' journey away.

BIBLIOG. J. Hackin, *L'art bouddhique de la Bactriane et les origines de l'art gréco-bouddhique*, *Bulletin archéologique... de l'Académie afghane*, Kabul, I, 1937; J. Hackin, *Recherches archéologiques en Afghanistan*, *Revue de Paris*, 1938, p. 17 ff.; E. Barger and P. Wright, *Excavations in Swat and Exploration in the Oxus Afghanistan*, *Memoirs of the Archaeological Survey of India*, no. 64, Delhi, 1941.

Haibak. Large village located in the valley of the Khulm River on the road to Tashkurghan. The ancient name was Samangan or Simingan (S. Beal, *Records of the Western World*, I, p. 43; Markwart, *Eranshahr*, p. 281). About two and a half miles north of the present-day village is a monolithic stupa, cut into the living rock by a trench about 12 1/2 ft. long which isolates its circular, flattened dome (diameter about 73 1/2 ft.). The dome is solid and is surmounted by

a cell, also cut into the rock, decorated with flattened half columns. According to A. Foucher, the work was never completed because of the great invasion of the Ephthalites. In its original plan, the stupa would have dominated the valley, since the trench, when enlarged, would have isolated the central mass. Foucher's hypothesis is doubtful because the dating, undoubtedly late, is uncertain. A short distance away is a Buddhist monastery cut into the rock; parts of this also are unfinished. It was composed of chapels, a dormitory, and an assembly hall. Its structure is similar to that of the monastery of Darunta near Jalalabad. In Cave III, which is a combination of chapel and assembly hall consisting of two connecting rooms with a single entrance, an arched niche is cut into each of the walls of the square chapel, and each is crowned with a half column 3 ft. high, the Buddhist symbolism of which is obscure; the capitals of the columns are pseudo-Ionic, like those often observed in Gandhara. The roof of the chapel is a hemisphere with false squinches in the Sassanian manner. There is no doubt as to the late date (4th-5th cent.) of interruption of the work, but a stupa cut into the rock is unique, and particularly curious is the fact that, being monolithic, it could not contain in its foundation the holy deposit or relic that would give it religious significance. Foucher sees Indian influence here and hints at the classic example of the Kailāsanāth Temple of Ellora. Haibak, with its adaptation of Sassanian motifs to rock-cut architecture, presents an interesting mixture of Iranian and Indian trends. The half columns of Cave III are a local persistence of Gandharan forms, whereas the rather complex plan of Cave II is evidence of an architectural vernacular which, following Foucher's lead, was related above to the structures of Darunta. Undoubtedly these monuments are the remains of a complete Buddhist establishment of some significance, whose chronological and structural problems make it still more important.

BIBLIOG. G. E. Yate, *Northern Afghanistan*, London, 1888; A. Foucher, *Notes sur les antiquités bouddhiques de Haibak*, JA, 1924, pp. 130-53; A. Foucher, *La vieille route de l'Inde de Bactres à Taxila*, Paris, 1942, I, pp. 123-29. For different opinions, cf. P. H. Heras, 'The Spread of Buddhism in Afghanistan', *Journal of the University of Bombay*, VI, 1938, part IV, pp. 1-14.

b. Bamian group. A great caravan and religious center, it was also the capital of a small autonomous kingdom. During the Chinese-Islamic period, the new city, founded by the Ghuri and called Shahr-i-Gholghola, had a notable splendor; it was destroyed by Genghis Khan in 1222. The city presents a citadel situated on the summit of a small hill dominating a valley, but from the archaeological and artistic point of view it is especially the Buddhist monuments that assure its fame. To the northeast, chapels, niches, cells, and dwellings were hewn out of a wall of overhanging rock. Two enormous statues are still to be seen in the rock, sheltered by their niches. One of them, 175 ft. high, is the largest statue in the world; the other, located about a quarter of a mile from the first, is 120 ft. high. The drapery is handled with a curious technique by which large ropes, held in place by dowels, outline the folds of the monastic vestments; each statue, including the ropes, is entirely coated with plaster. Three smaller statues, seated Buddhas in trefoil niches, were done in the same manner.

Stylistically, these statues seem to antedate the period of strong Iranian-Sassanian influence. The great central Asian (Ravaq) and Chinese (Yün-kang and Lung-mén) figures of the Buddha were inspired by the colossal of Bamian. The smaller is the older; the other, much damaged, reveals Indian influences of the Gupta period radiating from Mathura.

The archaeological finds of Bamian attest the existence and perhaps the contemporaneity, at least partial, of two different artistic currents: the first, very close to the Gandharan, is reminiscent of classicism; the second is clearly Iranian-Buddhist.

The smaller sculptures seem to present local characteristics and are related in subject matter to the production of Hadda and Gandhara. The paintings are predominantly of Iranian-Buddhist type, though stylized images in the Byzantine manner and others of undoubted Iranian inspiration are also found. Probably professional and amateur painters of very different origins worked at Bamian. Manes is supposed to have completed his artistic education here, a legend that proves the fame of Bamian.

Iranian influence appeared in Bamian in a modification of iconographical themes derived from Dukhtar-i-Noshirwan and particularly evident in the capitals with animal heads. Probably the oldest paintings go back to the 5th century and the later ones are probably from the 8th. Their influence spread to central Asia.

BIBLIOG. A. Godard and J. Hackin, *Les antiquités bouddhiques de Bāmiyān*, Mémoires de la Délégation archéologique française en Afghanistan, II, Paris-Brussels, 1928; J. Hackin and J. Carl, *Nouvelles recherches archéologiques à Bāmiyān*, Mémoires de la Délégation archéologique française en Afghanistan, III, Paris, 1933; B. Rowland and A. K. Coomaraswamy,

The Wall-paintings of India, Central Asia, and Ceylon, Boston, 1938; B. Rowland, *Buddha and Sun-god*, Zalmoxis, I, 1938, pp. 69-84; B. Rowland, *Studies in Buddhist Art of Bāmiyān: The Bodhisattva of Group E*, Art and Thought, London, 1948, pp. 46-50; R. J. Gettens, *The Materials in the Wall Paintings of Bāmiyān*, Technical Studies, VII, pp. 186-93.

Dukhtar-i-Noshirwan. Site near Bamian (about 7½ miles to the north) where traces of mural paintings in a rock-cut niche document a merging of Buddhist and Iranian trends, since they are the work of Buddhist craftsmen who were faced with the task of representing subjects commissioned by a sovereign or a local Iranian governor. They show a mixture of traditional motifs from the Gandharan repertory with others entirely foreign to it. It is maintained that from this almost casual meeting are derived the forms that characterize Iranian-Buddhist art. From this point of view the paintings at Dukhtar-i-Noshirwan are not only exceptional but unique.

BIBLIOG. A. and Y. Godard and J. Hackin, *Les antiquités bouddhiques de Bāmiyān*, Mémoires de la Délégation archéologique française en Afghanistan, II, Paris-Brussels, 1928; J. Hackin, *Buddhist Art in Central Asia: Indian, Iranian, and Chinese Influences (from Bāmiyān to Turfān)*, Studies in Chinese Art and Some Indian Influences, London, 1939, pp. 1-14.

Kakrak. Locality south of Shahr-i-Gholghola, apparently not recorded in Chinese sources. Here arose a Buddhist monastery with a large statue of the Buddha in the center; the remains of mural paintings affirm the importance of the monastery. The image of a hunting king wearing a crown adorned with three lunar falcons is analogous to similar images on coins of the Napki type. The representation of seven Buddhas inscribed in large contiguous circles with one in the center recalls Japanese mandalas. The style of the pictures, which both influenced the paintings of central Asia and received from it in turn certain iconographical conventions, reveals Sassanian elements and the persistence of Kushan reminiscences. Dated by J. Hackin in the middle of the 5th century, they are probably later (7th century according to R. Ghirshman).

BIBLIOG. J. Hackin and J. Carl, *Nouvelles recherches à Bāmiyān*, Mémoires de la Délégation archéologique française en Afghanistan, III, Paris, 1933; R. Ghirshman, *Les Chionites Hephthalites*, Mémoires de la Délégation archéologique française en Afghanistan, XIII, Cairo, 1948.

Fondukistan. Between Bamian and Kabul, about two miles from the village of Siyah-Gurd, is the beautiful valley of Fondukistan. The mural paintings discovered in 1937 by J. Carl indicate the existence of an Iranian-Buddhist current combining Sassanian and other post-Gupta elements. In a certain sense the paintings of Fondukistan mark a return to central Asian art because of their many analogies with the styles of that area. Although they are believed to be contemporary with the first style of Kizil, they are probably later.

BIBLIOG. J. Hackin, *Au sujet de quelques statues bouddhiques récemment mises au jour en Afghanistan* RAA, X, 1936, p. 130 ff., Eng. trans., *Journal of Greater India Society*, VII, 1940, part I, pp. 1-14 and part II, p. 98 ff. Reprinted in *Afghanistan*, V, no. 2, 1950, pp. 19-35.

c. Kapisa. The plain of Kapisa touches the Hindu Kush chain, whose principal passes open into it. It extends to the north of Kabul and is quite rich in archaeological ruins. The region of Kapisa, from Paitava to Shotorak to Kapisi-Begram, presents a particular stylistic and iconographical current that is undoubtedly Kushan and provides analogies with late Roman art, though it is nevertheless independent of it (cf. M. Bussagli, "Osservazioni sulla persistenza delle forme ellenistiche nell'arte Gandhāra," *RIASA*, Naples, V, 1956, pp. 149-247).

Khair Khaneh. The marble temple dedicated to the sun god Sūrya, discovered in 1936 at Khair Khaneh, occupies a place by itself in the region. Related in plan to the temple of Bhumara near Allahabad, the image of the god reflects Sassanian influences. Probably it goes back to the end of the 4th century B.C. J. Hackin, who discovered it, maintains that the Indian influence evident in the plan of the temple came through Seistan. It is the only sun temple in the region, but the solar cult was undoubtedly widely diffused in this area.

BIBLIOG. J. Hackin and J. Carl, *Recherches archéologiques au col de Khair-Khaneh près de Kaboul*, Mémoires de la Délégation archéologique française en Afghanistan, VII, Paris, 1936; Eng. trans., *Journal of Greater India Society*, III, 1936, pp. 23-35; D. P. Pandey, *Sūrya*, Iconographical Study of the Indian Sun-god, Leyden, 1939.

Kapisi-Begram. Summer capital of the Kushans, it was also formerly the principal center of Kapisa. It is identified by some with the Nicaea of Arrian and is also recorded by al-Bīrūnī. It was afterwards replaced and supplanted by Kabul. It is important not only for the discoveries made by the Hackin mission, which have already been mentioned, but also for the stratigraphical excavations

of R. Ghirshman. These reveal the existence of three strata, of which the second and third are separated by a brief gap corresponding to a phase of destruction indicated by wide traces of fire. The structures of Stratum I correspond to two successive phases. A red pottery similar to that of Hellenistic Iran accompanies the architecture of Stratum I, and in Stratum II the principles of Hellenistic city planning are applied to produce a plan similar to that of Dura-Europos. The Kapsi of the second stratum is undoubtedly Kushan; Ghirshman believes it to be the city of Kanishka. The presence of many coins of Huvishka and of eight coins of Vasudeva I establish the chronological limits of the second Kapsi, which was probably destroyed by the invasion of Shapur. The third Kapsi appears to have been dominated by a fortified castle with round towers at the four corners. The presence of coins of a later Vasudeva and of molded pottery of Sassanian type establishes the points of reference for the chronology. The presence of the castle may be associated with the profound change of regime resulting from the Sassanian invasion. Stone statuettes attest to the persistence of the Kushan style in a late epoch. All three of the strata of Kapsi show notable affinities with the architecture of Khwarizm.

BIBLIOG. J. Hackin, *Recherches archéologiques à Begram*, Chantier no. 2, 1937. *Mémoires de la Délégation archéologique française en Afghanistan*, IX, Paris, 1939; A. Foucher, *La Nicée d'Afghanistan*, *Comptes rendus de l'Académie des Inscriptions et Belles Lettres*, 1939, pp. 435-47 (excludes the Kapsi-Nicée equivalence); A. Foucher, *La vieille route de l'Inde de Bactres à Taxila*, *Mémoires de la Délégation archéologique française en Afghanistan*, X, Paris, 1942 and 1947; R. Ghirshman, Begram, *Recherches archéologiques et historiques sur les Kouchans*, *Mémoires de la Délégation archéologique française en Afghanistan*, XII, Cairo, 1946. J. and R. Hackin, J. Carl, and P. Hamelin, *Nouvelles recherches archéologiques à Begram (ancienne Kāpiś)* 1939-40, *Mémoires de la Délégation archéologique française en Afghanistan*, XII, Paris, 1954.

Paitava. A completely destroyed Buddhist monastery. In 1925 the stèle of the miracle of Śrāvastī was found here. It represents the tendencies of Kapisa better than any other work.

BIBLIOG. J. Hackin, *Sculptures greco-bouddhiques du Kāpiśa*, *MPiot*, XXVIII, 35 ff.; J. Hackin, *La sculpture indienne et tibétaine au Musée Guimet*, Paris, 1931.

Burj-i-'Abdullah. On a rocky headland about a third of a mile from Kapsi-Begram are remains of a fortress. Experimental excavations conducted by R. Ghirshman brought to light a very archaic system of pipes for an aqueduct and tiles with the imprint of a Greek theta, in addition to Gandharan sculptures. It is possible that this was a fortress built by Alexander on an earlier center.

BIBLIOG. R. Ghirshman, Begram, *Recherches archéologiques et historiques sur les Kouchans*, *Mémoires de la Délégation archéologique française en Afghanistan*, XII, Cairo, 1946.

d. Shotorak, Hadda, and other minor sites. Shotorak. Buddhist monastery rising on the edge of an Islamic cemetery and almost certainly identifiable with the convent built by Kanishka to lodge Chinese and central Asian hostages. The stone sculptures are undoubtedly of Kushan style. The use of round towers to reinforce the corners of a religious building is unique. The plan of the monastery is similar to that of other monasteries of Taxila.

BIBLIOG. J. Meunié, Shotorak, *Mémoires de la Délégation archéologique française en Afghanistan*, X, Paris, 1942; J. Meunié, *Le couvent des otages de Kanishka au Kāpiśa*, *JA*, 1943-45, pp. 151-62.

Hadda. In the vicinity of present-day Jalalabad is the ancient Hi-lo of Hsüan Tsang, one of the most important centers of Asian archaeology because of its documentation of the second, or stucco, phase of the Gandharan school. Iconographically and to some extent stylistically connected with the stucco production of Taxila, Hadda offers very interesting data for the local evolution of the stupa. It also reveals the profound change of taste that occurred at the end of the stone-working period. Episodes in the life of the Buddha were interpreted with a greater sense of humanity and with an esthetic apparently based on problems of light. Activity in this locality may have persisted as late as the 9th century, with interruptions.

BIBLIOG. J. Barthoux, *Les fouilles de Hadda: Figures et figurines*, *Mémoires de la Délégation archéologique française en Afghanistan*, II, Paris, 1930; J. Hackin, *La sculpture indienne et tibétaine au Musée Guimet*, Paris, 1931; J. Barthoux, *Les fouilles de Hadda: Stoupas et stucs, Textes et dessins*, *Mémoires de la Délégation archéologique française en Afghanistan*, IV, Paris, 1933; M. Hallade, *La composition plastique dans les reliefs de l'Inde*, Paris, 1942.

Jalalabad. A small modern city containing some beautiful buildings, Jalalabad was the great center of the Kushans and was important from the religious point of view. An imposing stupa, the Nandara,

or Haesta Tope, exemplifies architectural techniques of great interest. Excavated by Masson and Honigsberg, it is badly damaged but still impressive. It is believed to have been one of the structures of Nagarahara, an ancient capital whose exact location is not known but which is identified by some with present-day Hadda. A whole group of stupas excavated by Masson was destroyed as a result of the digging. Most notable was that of Bimaran, from which came the famous reliquary. The others — Darunta, Cahar Bagh Kotpur, and Passani — survive only in the drawings and data from those first adventurous, not very scientific, but nevertheless useful campaigns. A summary but clear examination is found in the work of P. H. Heras, "The Spread of Buddhism in Afghanistan," *Journal of the University of Bombay*, VI, part IV, p. 1 ff.

The discoveries of pottery at Shamshir Ghar have provided fictile materials of notable importance for the pre-Islamic period.

e. Kabul and the great Islamic cities. Kabul. Present capital of Afghanistan and probably the ancient *καβούσα* of Ptolemy. It supplanted Kapsi. It consists of the old city, the new city, and a relatively modern quarter. A fort, Bālā Hissār, a strategic point on the eastern slopes of a mountain called the Lion Gate, served as the royal residence and was destroyed by the English. The present Kabul is surrounded by ruined Buddhist monasteries and stupas from which works of Gandharan style frequently appear through fortuitous circumstances. There is also a Hindu temple. The so-called Minar-i-Cakri (the minaret of the wheel), which still rises south of the city, was a tower surmounted by an enormous imitation of a Persepolitan capital, repeating in exaggerated form the Indian motif of the *stambha*, or free-standing column. Surmounted by the Wheel of the Law, it showed pilgrims the way to Nagarahara.

The Moslem monuments, in addition to the tomb of Haber and the very beautiful gardens that surround it, are the metal-domed tomb of Timur Shab (who in 1774 made Kabul the Afghan capital), some mosques, and a bazaar. Modern monuments include the tomb of the emir Muhammad Azam Khan (in Russian style), a modern triumphal arch, the military academy, and modern palaces.

The Museum of Kabul, one of the richest in the Middle East, is also important for its classical art, since it contains the larger and more interesting discoveries from Begram.

Lashkari Bazaar. Site rising on a height a little over four miles from the citadel of Bust, of Parthian origin but also quite important in the Islamic epoch. It contains the remains of three Ghaznevid castles destroyed by a fire. Undoubtedly Lashkari Bazaar was a regal residence. It is important because it provides important documentation for the history of Islamic civil architecture, which, except for the princely residences of Abbasside Iraq and the architecture of Safawid Persia and Moghul India from the 9th century to the 14th century, was previously known only through texts (D. Schlumberger, p. 252). Ample documentation in the field of fictile production, mural paintings, and stucco wall ornamentation was brought to light by the excavations conducted by the Délégation archéologique française en Afghanistan in the area of the principal palace. These make Lashkari Bazaar one of the most important archaeological centers of Afghanistan. Many ruins still remain unexplored and may contain notable surprises. Ruins of a mosque and other buildings have come to light, together with an encircling wall.

BIBLIOG. D. Schlumberger, *Les palais ghaznevide de Lashkari Bazar*, *Syria*, XXIX, 1952, pp. 251-70.

Mazar-i-Sharif. Modern center with a number of beautiful buildings and a small museum devoted to Moslem art. A mosque, an elegant madrasah, and the tomb of the fourth caliph, 'Alī, constitute the artistic patrimony of the city itself.

BIBLIOG. A. Kohzad, *Afghanistan, Geographical and Historical Sketches of Some Localities, East and West*, VII, 2, 1957, pp. 128-30.

Herat. The largest center of Iranian-Moslem culture in Afghan territory and one of the most important of all Islam. It presents an ensemble of monuments, mosques, mausoleums, and minarets of the Timurid period. The citadel, Arg, goes back to the reconstruction made by the Kurds in the 14th century. The large mosque founded at the end of the 12th century under the rule of the Ghuri has recently been restored. It is one of the largest in all Khorasan. Besides the madrasah, the musalla, and the Mausoleum of Jawhar Shad, the Madrasah of Husain Baiqara should be noted.

Also of interest is the tomb of Abdullah Ansari, Moslem poet, mystic, and saint, who died in 1088, on which Shah Rukh Mirza built an immense niche in the first half of the 15th century. Here the Arabic letters of the interior polychrome inscriptions imitate the structure of Chinese letters. Herat, with its five minarets and other monuments covered with ceramic tiles of lapis-lazuli color, has a distinctive appearance. Center of the pictorial school bearing

the city's name and also of a high-level production in the fields of pottery, metalwork, carpets, and textiles, it was called the "pearl of Khorasan."

BIBLIOG. Survey of Persian Art, A. U. Pope, ed., Oxford, 1939, II, III, *passim*; s. v., *Encyclopédie de l'Islam*, 2d ed.

Ghazni. An important center of the ancient kingdom of Zabul, it owed its greatest prosperity to the Ghaznevid dynasty and was therefore primarily an Islamic center. Destroyed several times, first in 1149, its splendor was dimmed by the invasion of Genghis Khan. It became known as a center for bronze and gold work rather than for its monuments; however, it is remembered for two minarets, one bearing the name of Mas'ud III, and a star-shaped one bearing the name of the Ghaznevid sovereign Bahram Shah.

BIBLIOG. Survey of Persian Art, A. U. Pope, ed., Oxford, 1939, II, III, *passim*; s. v., *Encyclopédie de l'Islam*, 2d ed.; A. Godard, *L'art ghaznévide, la civilisation iranienne*, Paris, 1952; Naimi Ali Ahmad, *Les monuments historiques et les mausolées de Ghazni, Afghanistan*, VII, no. 2, 1952, pp. 9-18; A. Bombaci, *Ghazni, East and West*, VIII, 1957, pp. 247-59.

Kandahar. The modern city was founded in 1748. It has a citadel, which has been transformed into a government palace, and the mausoleum of the founder, Ahmad Shah, an octagonal covered by a large dome. The ruins of the old Kandahar, destroyed in 1738, give evidence of a glorious past, but except for the monument built by Baber to record his glories and those of his successors, the city contains little of interest. The monument of Baber itself, cut into the rock, is valuable for the inscriptions incised in the interior, but esthetically it is relatively insignificant.

BIBLIOG. There have been no detailed studies of Kandahar except articles in some of the great encyclopedias, such as the French and the Britannica.

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Illustrations: 2 figs. in text.

AFRICA, BRITISH EAST. British East Africa includes the Kenya Colony, the Tanganyika Territory, the Uganda Protectorate, and the Sultanate of Zanzibar, with a fairly diverse population (Bantu, Sudanese, Nilotes, and Hamites, besides the European and Asiatic minorities) which exceeded 19 million inhabitants in 1954. The artistic production of the entire area has always been poor in comparison to that of the neighboring countries to the east and south. Only in the coastal territory and on the islands has architecture had interesting developments, and these are the result of Asiatic colonization. Modern European influence is irrelevant here, with sporadic exceptions that can be attributed to Portuguese occupation.

SUMMARY. Prehistoric and archaeological remains (col. 47). Modern indigenous art (col. 49). Colonial period (col. 50).

PREHISTORIC AND ARCHAEOLOGICAL REMAINS. Much of East Africa is rich in neolithic sites that are very important in the study of the most ancient African cultures, but only above these levels is there material of even occasional artistic interest. Thus, at Luzira Hill near Lake Victoria (Uganda), rock shelters have furnished two groups of ceramics, together with a great deal of relatively recent material of uncertain date. To the first group of ceramics belong potsherds decorated with parallel lines, dots, and circles; to the second belong fragments of anthropomorphic statuettes. The two best discoveries are a schematically rendered human figure and a head whose head-dress suggests that of the present-day Madi and Lendu of the southern Sudan. Other pottery, decorated with finger impressions and, more rarely, with circles, has been found at Mubende Hill (between Kampala and Fort Portal, Uganda) and nearby.

In Tanganyika, especially within a radius of 15 to 20 miles around Kondoa, and at certain sites in Uganda, a number of discoveries have brought to light a wealth of rock pictures of prehistoric man, some of which Fosbrooke and Leakey see as providing a connection between the stone art of South Africa and the Sahara. They include naturalistic drawings of game animals and highly stylized human figures. At certain sites, 13 superimposed strata have been counted, the last 3 being presumably of recent origin; Leakey found 10 distinct styles at Kiseke alone, and Alimen claims that 17 epochs have been characterized by the various styles in the area. More recent discoveries were made in 1953 by Tanner near Mwanza at some 18 sites on the islands and near the shores of Smith Sound. Tanner's finds, unlike the Kiseke pictures, were mainly concentric circles and designs of dots and straight lines. On two sites there

were designs almost identical in outline with the "formlings," or rows of cigarlike forms, which Frobenius found in Rhodesia (see RHODESIA AND NYASALAND). The pictures found at Nyero Hill (Teso, Uganda) by Lawrence in 1953 show an acacia-pod or ladder design and canoes of various sizes containing oarsmen, with concentric circles superimposed. At Obwin Rock (Soroti, Uganda) was found an unusual design consisting of six concentric rings drawn with remarkable symmetry. The symbolism of this pictograph is unclear.

Petroglyphs (wall engravings) in this area are much rarer than paintings. In Tanganyika they consist mainly of irregular lines and cup markings, whereas in Kenya, especially in the basin of Lake Rudolf in an area now abandoned even by wildlife, engravings have been found which depict human figures and animals such as the giraffe. A group of petroglyphs on a granite outcrop in Buyaga County near Mubende (Uganda) depicts an archaic type of hoe. The dating of petroglyphs, as of paintings, is at present purely conjectural and fairly controversial; in certain cases it is based on similarity to recent works, even though these are not assignable to the present inhabitants. This is the case with the engravings on outcrops observed near the rubble of buildings discovered in 1913 by H. Rock near the Engaruka River (Rift Valley, Tanganyika) and described thereafter by Leakey. The buildings (low walls at right angles to one another, sepulchral mounds, and fortifications) do not seem to be more than two or three centuries old. The engravings consist of irregular lines or recall the "cup and ring" of European archaeology; Leakey interprets them doubtfully as tribal markings. Analogous configurations have been discovered in the Sandawe at Tondgii (near Mangasta) and on the slopes of Kilimanjaro.

"Mixed" Asiatic colonization (Arab, Indian, and Persian) of the eastern coast of Africa on the Indian Ocean, dating back well before the coming of the Portuguese, has left abundant archaeological remains on the islands and along the coastal strip of Kenya and Tanganyika. It should be noted that most of this material belongs to the later phases of colonization (11th to 18th century). It consists of stone structures (including dwellings, palaces, mosques, town walls, wells, monuments, funerary columns), which are mostly ruined and deserted, often submerged in sand or overgrown with vegetation, and frequently put to new use or restored in successive eras, as during and following the long Portuguese occupation (16th and 17th century; see AZANIAN ART). The coastal sites and monuments have not yet been systematically catalogued, and excavations and restorations have only recently been begun in a few areas. Scattered monuments of artistic importance have been or are being studied: they are to be found in the small island centers of Patta, Manda, and Siyu, where there is a late "castle," and on the island of Lamu, where there are the ruins of what is referred to in the local tradition as a "Persian monastery," the finely carved doorway of which is still fairly well preserved. At Malindi are tombs and funerary columns, and at Gedi (8 miles southwest of Malindi and 4 miles from the sea) is the largest and most important archaeological site in Kenya, with ruins of an entire city apparently founded in the 12th century. This city was rebuilt and enlarged with new town walls in the 15th and 16th centuries, gradually abandoned after the end of the 16th century, and invaded thereafter by dense forest vegetation. Excavations and systematic restorations of the site were begun in 1950, and the most important discoveries are the remains of a great palace and of a jami. At Mnarani, near Kilifi, are pilasters and handsome carved stone tombs that date from the 15th century. At Takwa and at Shanga are funerary mosques, and at Mombasa the fortress known as "Fort Jesus," which was built by the Portuguese in 1593, rebuilt in 1635, and rebuilt again thereafter to suit the needs of the local Arab and Swahili inhabitants. Fort Jesus is a massive quadrangle of some 120 sq. yds. Four bastions face the cardinal points, and the fort is encircled by a broad, deep moat. On the island of Pemba is "Chake Castle," an Arab fort. At Zanzibar is the Mosque of Kizimkasi, built, according to a Kufic inscription on the mihrab, 500 years after the Hegira, or 1106-07, and extensively rebuilt in 1770-71. At Zanzibar also is an Arab fort of recent vintage. At Kilwa Kisiwani are the ruins of walls and bastions and the remains of various structures such as a palace and two great mosques, of which the larger jami must already have been fairly old at the time of ibn-Batuta's visit in 1332. It was restored in the 15th century. At Kilwa also are three Arab forts, one of which may have been built over an early 15th-century Portuguese fort. At Songo Mnara, at the southern end of the bay of Kilwa, are the remains of mosques and palaces and of a tower still in use as a lighthouse. Pottery has been found at all the coastal sites, often, so to speak, by the shovel: a reddish ware manufactured locally since the 13th century in a limited variety of forms and with scant decoration; pottery imported from India or the Persian Gulf; and some Chinese porcelain mostly from the Ming Dynasty. Minor arts of the coastal region include modest woodworking (the carving of doorposts and pediments with geometric motifs) and the manufacture of cylindrical or faceted beads

cut from conch shells or from ostrich-egg shells; local metalworkers have produced necklaces of silver filigree, a tradition that is still alive in present-day coastal centers.

MODERN INDIGENOUS ART. The majority of the existing tribes can boast of little artistic activity. Wooden sculpture in the round appears only among the Makonde and their kindred the Mavia, who occupy the territory between the Ruvuma and Lukuledi rivers in Tanganyika. Their production includes small ancestor statues about 15 to 23 in. high, masks representing male and female faces (the females distinguished by their labrets, or lip plugs), figures of evil spirits with long horns and thick beards, animals, and the *mitete*, or boxes for gunpowder, tobacco, or medicine. These boxes are carved in human form and ornamented with scarifications and the horsetail headdresses characteristic of the present-day Mavia and often bear on their lids representations of the local fauna — monkeys, antelopes, antelopes, and other animals. The Wachaga in the Kilimanjaro district produce clay figures, some in human form, called *nungu*, and some in the shape of pots with breasts. As works of art, the clay figures of the Kikuyu of Kenya and of certain mountain tribes of eastern Tanganyika leave much to be desired, but as training aids for the young they appear to be highly efficacious. Other clay figures, also of simple manufacture, come from the Banyoro in Uganda. The coastal Bantu of the "Nyika" grouping (Kenya), especially the Wagiryama, sometimes erect on their tombs funerary posts called *vigango*, which are often elaborately carved with geometric motifs and sometimes surmounted by semirealistic male and female heads. Rather crude wooden figures resembling carved posts are also occasionally produced by the Teso and Lango from Uganda (see Nilotic Cultures).

In the field of painting the only interesting examples are the murals of the Usukuma, executed by the members of the society of snake charmers for their initiation rites. The representation is largely naturalistic, even when such mythical figures as the two-headed giant Simongala escorted by wildcats are reproduced next to actual creatures (crocodiles, snakes, or men). The Luo paint conventional figures of men and beasts on the outer walls of their dwellings.

The decorations on useful objects are seldom of real artistic value. Among the Luo and the Nilotic and Hamitic tribes of Uganda, there are gourd vessels on which geometric designs have been carved or burned (poker work), sometimes with schematic figures of men, birds, or plants. Among the Bantu lake people there are wooden vessels carved with geometric motifs in low relief, sometimes with symbolic ornaments (in the form of arrows, snakes, knives, moons, and stars) appliquéd in thin layers of copper, zinc, or brass. Baskets of elegant form are interwoven with geometric motifs in black and white. Similar patterns are outlined in tiny dark blue, turquoise, and pink beads on ceremonial objects reserved for the royal caste (e.g., trumpets, gourd bowls, and insignia of rank). This type of polychrome geometric decoration is found also among the Bantu of Karagwe, Usinja, and Ukerewe (Tanganyika). Pottery in Uganda is limited to a few recurrent utensils such as jars and jugs for water and beer, vases with two or more spouts, and pipes with one or more bowls. In some cases these pieces are elaborately decorated on the rims or on the whole exterior surface with geometric designs impressed with a cord or scratched on, generally in horizontal bands and more rarely in festoons or radial bands. Although the motifs vary from one tribe to another or even from one locality to another, the technical processes of decoration are essentially the same among the Bantu groups (such as the Banyoro, Baganda, and Wahima) and the Nilotic tribes (such as the Acholi and Lango).

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Douglas C. Fox

COLONIAL PERIOD. The interior of Kenya was not explored and colonized until the 19th century; the remains of the earlier Portuguese settlement are confined to the coastal region. The following are the principal centers:



British East Africa: main tribal groups (names in italic capitals) and distribution of archaeological and artistic materials. (1) Borders of B. E. A.; (2) rock pictures; (3) remains of monuments of the Azanian coastal region; (4) present-day native sculpture.

Nairobi. The capital of the colony, it was founded in 1899. The modern development of the city has been guided by the ambitious Thornton-White plan. It provides for satellite towns for Europeans (Athi River, etc.) of a predominantly residential type, with fine public and private buildings, while the natives occupy a separate location. The Coryndon Memorial Museum, opened in 1922, contains natural-history material.

Mombasa. Although it is a city of Oriental aspect, it nevertheless possesses public buildings and residential quarters of European type. At Ras Serani there are ruins of the church of Nossa Senhora das Mercês, constructed by the Portuguese in the 17th century on

the site of a Turkish fort and turned into a fortress again by the Arabs. The city possesses Catholic and Protestant cathedrals, the latter in Moorish style, and Hindu, Parsee, and Mohammedan temples.

Malindi. Here is found a commemorative pillar marking Vasco da Gama's voyage to India — not the original one, but a replacement of perhaps 1500. There are also a Portuguese guard tower and fragments of walls which originally belonged to one of the earliest Catholic churches in Africa.

In Uganda, besides architectural remains of undetermined date, there are relatively recent European constructions. Early ruins, possibly of the period 1400–1500, are to be seen at Bigo and Nturi in the district of Masaka. Jinja is a flourishing industrial city. Kampala, built on a hillside site, has many churches, mosques, and modern buildings; on the adjacent hills of Mengo and Kasubi are located respectively the Parliament and the tomb of the native ruler Mtesa. Kampala also has a modern museum with an important collection of native musical instruments.

The Protestant cathedral, which recalls St. Paul's in London, was built in 1913. The mosque of Narimbene, belonging to the followers of the Aga Khan, is notable.

In Tanganyika are preserved the remains of a number of periods of foreign domination — Persian, Arab, Portuguese (16th century), and finally German (end of the 19th century). Dar-es-Salaam, founded in 1866 and completed by the Germans, has among other public buildings a museum. Tanga, a German foundation, possesses a characteristic Arab cemetery. Pangani is an old Arab city, while Ujiji, a typically African town, preserves a fortress from the German period.

The architecture of the island of Zanzibar, controlled in turn by the Arabs and the Portuguese, is of varied character. In the cities are Arab and Indian quarters as well as 19th-century European buildings. The typically Arab quarters are noteworthy for their low-roofed white houses with massive doors of dark wood carved in relief with foliate designs. The present seat of government was built in 1883 as a ceremonial palace for the sultan. An Arab fort of 1784 was erected over a Portuguese church, whose tower is partially preserved. There are some fine private homes, such as that of Tippu Tib, a museum with historical collections, a semi-Gothic Anglican cathedral built (1873–79) on the site of the former slave market, and a Roman Catholic cathedral in Renaissance style. The now-ruined but beautiful Arab houses on the island of Pemba are of interest.

Illustration: 1 map in text.

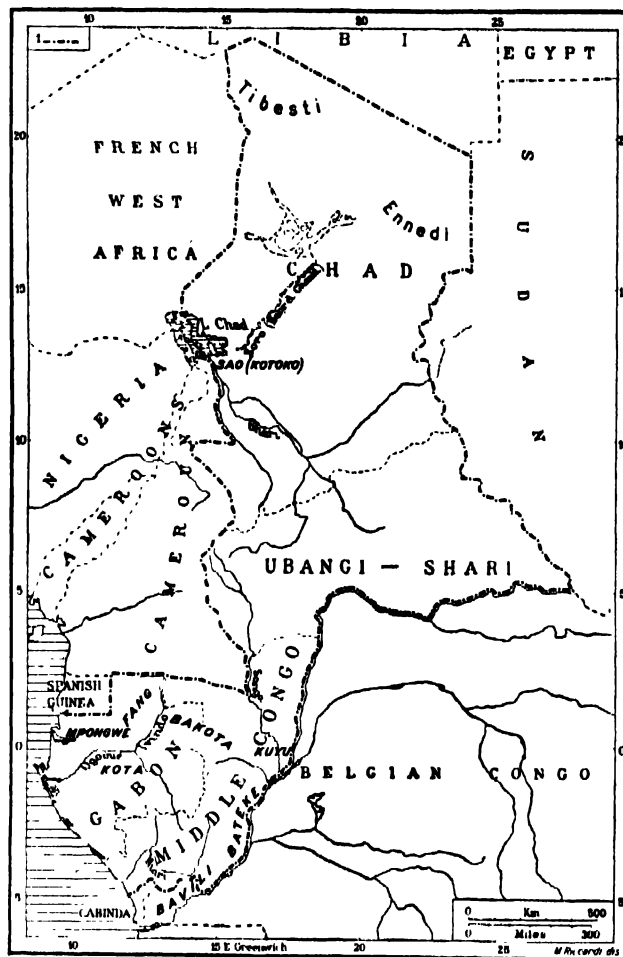
AFRICA, FRENCH EQUATORIAL. French Equatorial Africa borders the Atlantic between the Rio Muni territory of Spanish Guinea and the Portuguese territory of Cabinda and extends into the interior as far as the Congo-Ubangi line. It covers an area of 979,878 square miles and has an indigenous population of about 4,500,000. It is bounded by the Sudan, Libia, French West Africa, Nigeria, and the Cameroons, and comprises four territories of differing size and population density: Chad, Ubangi-Shari, Middle Congo, and Gabon.

SUMMARY. Prehistoric and archaeological sites (col. 51). Centers of contemporary artistic activity (col. 53): *Middle Congo; Gabon.* Colonial art (col. 55).

PREHISTORIC AND ARCHAEOLOGICAL SITES. The prehistory of French Equatorial Africa is a young science: the sites presently known furnish very little material of artistic value. H. Breuil mentions rock paintings in central Africa; and the Tibesti Mountains and Ennedi region, which territorially constitute part of Chad though otherwise they are considered to belong to the Sahara complex, are rich in rock paintings and engravings that have as yet been little studied.

The remains of brick villages along the Soro in the Bahr el Ghazal area of Chad are of archaeological interest. In the border region between Lake Chad, Nigeria, and the northern Cameroons, more than 120 sites have been excavated. The material found there indicates a complex culture called the "Chad civilization" by its discoverers, J. P. Lebeuf and A. Masson-Detourbet, and containing Negro, Hamitic, and even Semitic elements. An abundance of material has been discovered: more than 15,000 pieces, attributed to the Sao people. The Sao settled in this region in about the 10th century and were driven out of it by the Islamic invaders in the 16th. Their descendants, city dwellers as well as fishermen, are known today as Kotoko (sing., Kotkay), a word of Arab origin, or Makari. The examples of Sao work, found both on the sites of ancient cities and in tombs, comprise both terra-cotta and bronze objects, the early

growth of the bronze technique corresponding to the full flowering of the ceramic. The terra-cotta pieces, comprising the greater part of the material found, are of a wide variety: funeral urns, drinking vessels, dishes, bowls, toys, money, jewelry, pipes, bobbins and sinkers, animal figures, human masks and statues, ritual objects, ornamented bricks, whistles, rattles, and even an arrowhead. In spite of their diversity, the pieces show an unmistakable cultural unity. The vessels are decorated on the rim or belly with stripes, deep cross-hatchings, and wheat-grain and rice-pip designs. More important are the sculptures of humans (whole figures or heads only) and animals. The human images are of two types: ancestor divinities, and more primitive masked dancers or perhaps monsters. They were



French Equatorial Africa, showing the main tribal groups (names in heavy type). Key: (1) Boundaries of French Equatorial Africa.

usually placed in public sanctuaries such as that at Tago. Among the animal statues, which may have been connected with hunting and fishing rites, are porcupines, hippopotamuses (found only at Drik and Tago), marine mammals, and lizards. Of exceptional importance was the discovery of metal objects, especially bronze, whose existence in that region had been hitherto denied. Tradition attributes to the Sao the introduction of "living gold," a mythical metal very similar in its appearance to gold. Gold objects have not yet been discovered, but among the bronze and copper objects unquestionably of Sao workmanship are anklets, bracelets, necklaces, rings, beads, lip plates, and buttons, as well as an admirable collection of pendants. All these objects were cast by the *cire-perdue* method. According to Lantier, the Sao bronze workers were "related" to those of Benin and the Mossi region. Iron jewelry of simple design has also been found. One of the most important centers of metal refining was Midigué, where forges have been discovered as well as many fine bronzes: the head of a gazelle (according to M. Mauss, of Nubian origin), ducks, breastplates, and ceremonial cups. Bronze plaques and multibranch pendants have been found at Mainuguri. According to tradition these plaques formerly were inscribed with characters, probably Arabic.

CENTERS OF CONTEMPORARY ARTISTIC ACTIVITY. Artistic production in French Equatorial Africa in the mid-20th century is limited for the most part to the Middle Congo and Gabon. In the Chad area the few examples are by the Kotoko: jewelry and wax dolls made by children.

Middle Congo. The Kuyu, Bateke, and the Bavili tribes are producing a traditional art. The Kuyu, living along the Kuyu River north of the confluence of the Sanga and the Congo, have a social structure that seems to have been determined by a division of the country into two parts, the eastern half under the protection of the snake and the western half under the protection of the panther. The panther was represented by a drum with colored spots containing the skin of a leopard, and the snake by a human head lightly carved in soft wood, painted with striking colors and prolonged by a neck.

The Bateke and the neighboring Babembe were, in the 16th century, subjects of the kingdom of Loango. From them come fetish figures (*biteke*) which were carved at the birth of a boy and contained in their belly part of the placenta mixed with red powder (*tukula*). Their function was to guard the boy until he reached puberty, after which they lost their efficacy and could be thrown away or sold. The figures are crude, consisting of a cylindrical trunk with arms close to the torso and legs half bent; the head is surmounted by a trapezoidal beard. According to Lavachery, some fetish figures are influenced by the Bambala of Kwango.

The Bavili are the creators of nail-studded fetishes (*nkisi*, plural *minkisi*) the most dangerous of which are the *minkisi konde*, used to seek the punishment of a guilty person or the death of an enemy. Some fetishes are used in a test of good faith.

An interesting experiment in adapting native artistic ability to painting has been made in the studio of M. Lods in Poto-Poto. There Africans can experiment freely with the materials put at their disposal. Their vividly colored paintings in tempera reveal exceptional facility in treating surfaces. The work is specifically African in character, although it represents a break with traditional techniques.

Gabon. Gabon is inhabited by three important tribes: the Mpongwe on the coast and right bank of the Ogooué; the Bakota, who came from the north and settled in the area between the upper Ivindo and the valley of the Nirar Juilu; and the Fang, scattered from the Sanaga to the Ogooué. Each had a rich and elaborate art, today surviving only in museums. This state of affairs — identical in the Middle and Belgian Congo — stems from the fact that in the Bantu countries the transformations born of colonialism are most complete.

The Mpongwe, like the Bakotas, came from the upper Ivindo. Their masks, attributed also to the Balumbo, Mashango, Eshira, and Galoa, are enigmatic and have little of the appearance of Negro art. One such mask was found in the heart of the Bakota country. Made of soft wood, painted white, and surmounted by a helmet, they recall certain masks of the Far East. To the Mashango they represent spirits of the dead; elsewhere they are connected with feminine societies, but their origin remains obscure.

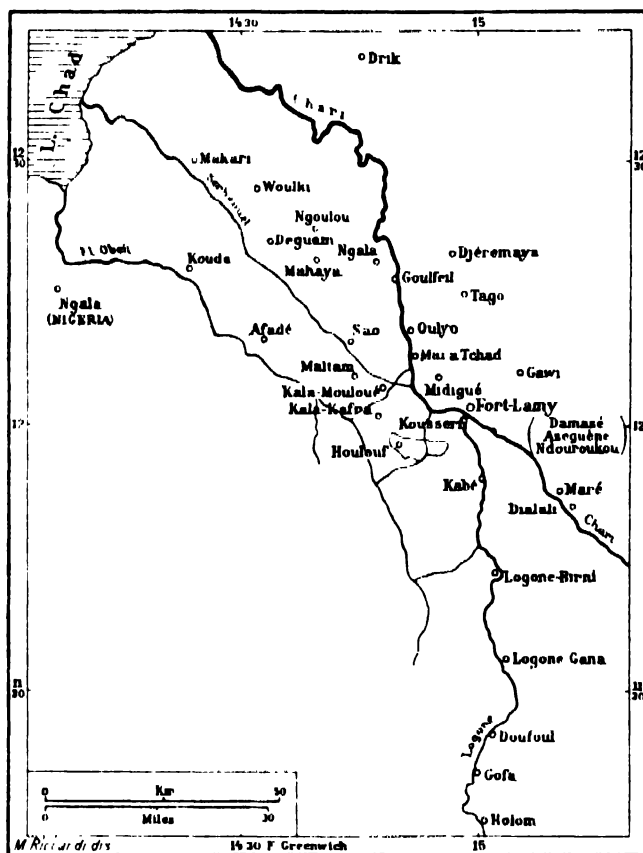
The Bakota produce commemorative figures and masks used by secret societies. The figures, placed on top of baskets containing the bones of the dead, are of beautiful workmanship, purely abstract and highly stylized. They are made on a wooden frame, the lozenge-shaped lower part representing the four limbs, and the upper part forming the face. The forehead is either concave or convex. According to recent studies by E. Andersson, the representation of masculine faces with convex foreheads and feminine faces with concave foreheads is no longer general. Figures with one face are called *mbulu ngulu*, and those with two faces (Janus) are called *mbulu viti*. In contemporary pieces, the wooden frame of the face is covered with sheets of studded brass; in the past narrow parallel bands of iron or copper were used. Similar figures, used for the same purposes, are found among the Ondumbo and Aduma people. According to S. Paulme the figures called *naja*, done by the Ossyeba, are the result of an extreme stylization of the Bakota figures. The masks play a role in the many secret societies that have to do with initiation ceremonies, funerals, and the guarding of plantations.

The Fang, also found in Spanish Guinea and the southern Cameroons, emigrated to the south from the Bahr el Ghazal region and settled more than a century ago near the Ogooué. Their sculpture includes masks, funerary figures, and "dice" carved from the stone of the elang fruit and used in playing *abia*, now a simple game of chance but formerly more complex. On these dice, which are oval and less than 2 in. long, dancing and fighting scenes, people and animals (panthers, antelopes, night birds) are carved with great subtlety.

The masks are of many styles, each minor tribe having its individual style. Along the coast they are helmet-shaped and carved in soft wood, often with two and sometimes even four faces. The face is painted white, decorated with mirrors inlaid in the wood,

adorned with feathers and horns, and sometimes surmounted by a smaller figure.

The anthropomorphic figures often placed on the tops of baskets containing family treasures and the bones of the dead, the *byeri*, were the first examples of African art to interest European painters and collectors. They show the head, the bust, or the entire body and are remarkable for their esthetic quality. The forms are distinctive but integrated into a harmonious whole and are covered with a rich black gloss obtained by prolonged immersion in mud. The eyes are shown as a protuberance with a horizontal slit (coffee



Chad Region: archaeological sites.

bean) or by a brass disk. It is not known whether the statues represented ancestors or were used to ward off evil spirits.

Mention should also be made of clay statues, sometimes as much as 10 ft. high, associated with secret cults such as the *Ngil* and used especially in finding criminals; but they are of little interest artistically.

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Jean LAUDE

COLONIAL ART. The Portuguese visited the coastal region of the country in the 15th century and subsequently penetrated the interior by means of outposts and Jesuit and Capuchin missions. The towns they founded and a few houses, especially in the Middle Congo and Gabon, constitute the remains of their occupation. Except for these, archaeological remains are relatively rare: there are those of foreign and local kingdoms (ruins at Ouara in Chad, capital of a sultanate in the 18th century) and of the Dutch and French settlements (a fort at Aumale dating from 1848), the foundation walls of Libreville and Franceville in Gabon, and ruins at Loango in the Middle Congo, from the end of 18th century. The most important cities, built as seats of occupation and resembling fortresses, are almost entirely modern; their systematized planning began at the end of the 19th century. Their chief interest lies in their remarkable recent expansion in a modern, international style of building and the gradual replacement of old quarters, as in Libreville, Brazzaville (a modern colonial city), Point-Noire, Bangui, and Fort-Lamy. These cities have been given new regulatory plans designed to fill their particular needs, with satellite towns, new characteristic native sections, and modern facilities. Certain towns, such as Abéché in Chad, preserve the native aspect.

Illustrations: 2 figs. in text.

AFRICA, FRENCH WEST. Bounded on the north by Rio de Oro and Algeria, on the west and south by the Atlantic Ocean, and on the east by Chad (officially Tchad) and Nigeria, French West Africa forms a vast bloc surrounding on its Atlantic coast the foreign territories of Gambia, Portuguese Guinea, and Sierra Leone and the independent republics of Liberia and Ghana. It contains a number of areas that have much in common ethnically and culturally, though they are artificially divided administratively and politically: Mauritania, Senegal, French Sudan, Niger, French Guinea, Ivory Coast, Upper Volta, Togo, and Dahomey. (In 1958 the people of French Guinea voted for independence from the French Union.) In addition to indigenous art, the region gives evidence of the art of Europe.

SUMMARY. Prehistoric and later archaeological sites (col. 55). Centers of contemporary indigenous art (col. 56): *Senegal; French Guinea; Ivory Coast; Togo and Dahomey; Upper Volta; French Sudan and Niger.* Colonial construction (col. 61).

PREHISTORIC AND LATER ARCHAEOLOGICAL SITES. Systematic research in the prehistory and archaeology of this entire region is relatively recent. There have been important prehistoric finds only in Mauritania, where the westernmost examples of Saharan rock art are found. Most of the rock engravings (no paintings are yet known) are on the northern cliff of the *dhar* of Chinguetti (el Beyyid Ziri) in the Adrar region of Mauritania. A series of older carvings, antedating the use of the camel, differs from more recent ones, which have tiffinagh and even modern inscriptions. Another important group of rock carvings is in the *dhar* of Tichitt-Oualata in the Aouker region at the sites of El Glatt and Taoket, and a few others are at el Moiane in Tagant and south of Erg Chech at Mjebir. At In Dagouber in the Taoudenni region of French Sudan there are some realistic female figures of neolithic workmanship. Near Bamako on the upper Niger De Zeltner discovered neolithic remains and outline drawings on rock of rudimentary human figures, and he also brought to light in the environs of Kita, near the upper Senegal,

a number of sites, of which the most important is Boudoufo, where there are designs in black and red: crossed rectangles or ovals, ruled squares, and simplified human figures. Among the megalithic monuments there should be mentioned a group of carved menhirs discovered by Desplagnes at Tondidarou in French Sudan. Pottery has been found in a neolithic site at Cape Vert (Senegal) by Mauny and in Fouta Djallon (Pété-Tounté) in French Guinea, where Desplagnes and Guébard found fragments and polished schist axes. Neolithic objects collected by Colonel Roulet include fragments of pottery incised with patterns of scallops and slanting, horizontal, or undulating parallel lines. P. Clamens reported tiny pottery objects in association with stone balls in the Ivory Coast.

Later archaeological finds are more abundant and varied. In a tumulus near Saint-Louis in Senegal J. Joire discovered copper, gold, and silver jewelry, including a large gold breastplate. From the same source come glass, coral, and quartz beads (aggré beads), which Mauny does not consider to be of Phoenician origin, but rather eastern Mediterranean or Indian. Similar beads, as well as some terra-cotta and stone figurines, were reported in Dahomey by Duglans. On the left bank of the Niger (downstream from Mopti in French Sudan) small human figures of pottery were discovered at the end of 1948, which can be related to those found in 1933 at Kaniana near Djenné, a little south of Mopti and also on the left bank of the river. According to Mauny, their style is comparable to that of similar finds in the Bassari and Kissi country (French Guinea), in the Ashanti and Sekondi country (Ghana), in the Kano, Jema, Nok, and Ife regions (Nigeria), in the Fort-Lamy area (Chad), and the Krinjabo region (lower Ivory Coast). Clay heads adorned with feathers are still used today in funeral rites in the forest regions of the lower Ivory Coast and of Liberia.

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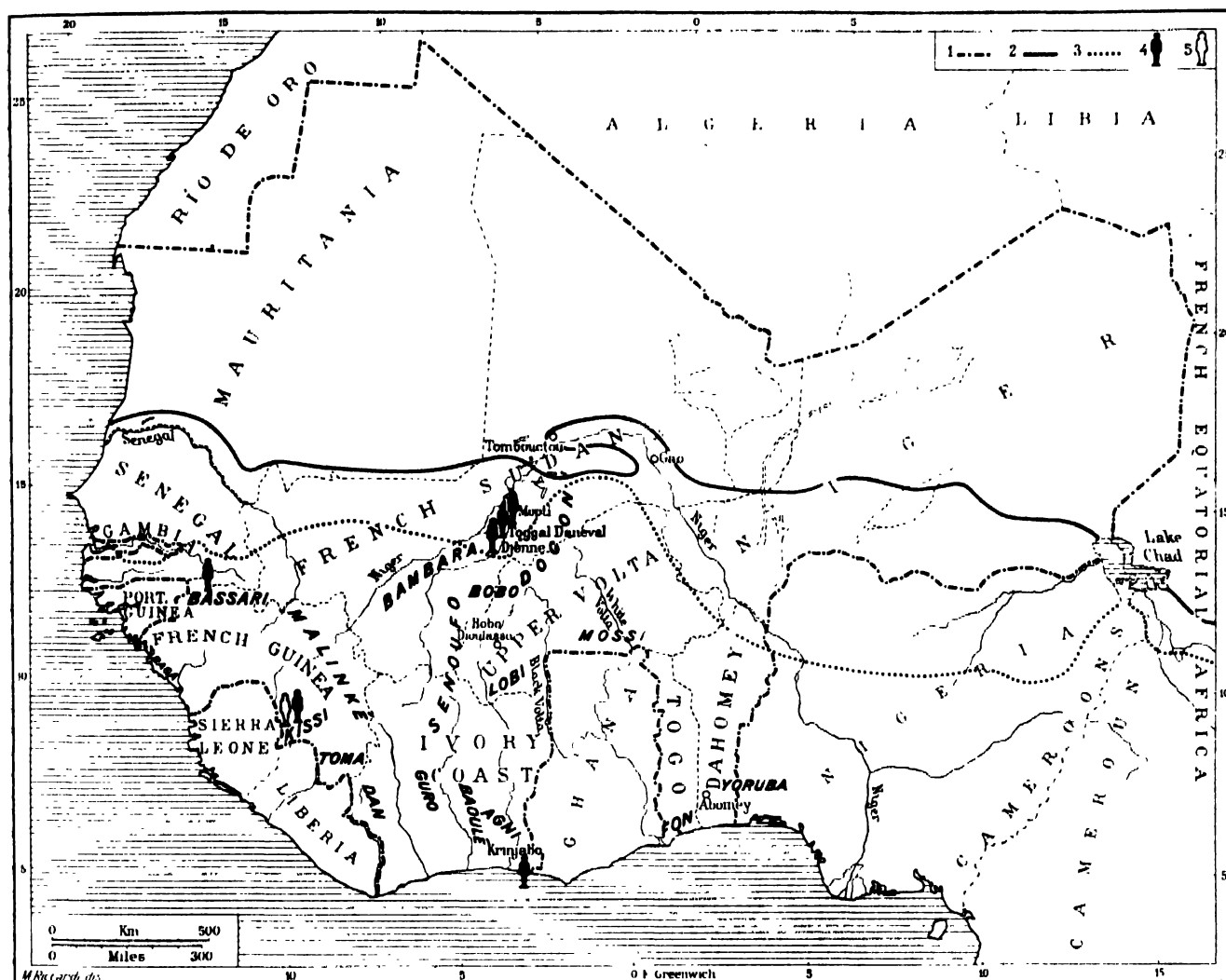
CENTERS OF CONTEMPORARY INDIGENOUS ART. Senegal. The absence of sculpture (so widespread elsewhere in western Africa) among the Senegalese tribes (Wolof, Serer, Tukulör, and Fula) is caused either by their relatively early Islamization or by prejudice against the "ancient" crafts of the potter, smith, and carpenter in favor of the modern ones (weaving, saddlery, and tanning) introduced, presumably, by the dominant Hamitic population.

The only masks of the region, the so-called "helmet-masks" worn by the circumcised of Casamance (between Gambia and Portuguese Guinea), are not works of sculpture, but are made of wickerwork, decorated with red seeds, and surmounted by antelope horns; the eyes are protruding wickerwork cylinders, and a raffia fringe at the base of the mask disguises the wearer. Jewelry includes bracelets, anklets, earrings, and pendants, of copper, aluminum, tin, gold, or silver. The filigree technique, unknown in almost all Negro Africa, is found only on the borders of the Sahara near the caravan routes from the north. From this technique is derived the modern Senegalese and Songhai cabochon and filigree jewelry. Morocco leatherwork, spread over an area larger than Senegal and extending even into French Sudan, Niger, and a part of Upper Volta, shows definite Tuareg and Hausa influences.

French Guinea. The principal tribes are the Baga along the coast, the Kissi in the area northeast of Sierra Leone, the Malinké along the Sudan and Ivory Coast borders, the Toma, who occupy the

area north of Liberia, and the Koniagui and Bassari near the Senegal border. The Kisi and the Bassari have only archaeological sculpture; the Kisi, for religious purposes, use soapstone figurines from the Kissidougou region, which they, as well as the Mendi of Sierra Leone, imitate roughly today in stone or clay. Although almost all Malinké are Moslem, they nevertheless make figurines and zoomorphic masks of a style intermediate between that of the Bambara and of the Senoufo. The figurines, from 23 to 29 in. high, represent seated or standing women.

Ivory Coast. The artistically productive peoples of the Ivory Coast can be divided into a western group of the Atlantic forest region (the Dan, the Guere, or Ghere, and the Wobe), an eastern group (the Baoulé, the Guro, and the Agni) belonging to the "Guinean" civilizations, and the Senoufo, who live in the midst of the Sudanese savanna in the north. The western tribes use masks associated with the Poro, which is both a secret society and an initiation rite. The masks represent the thunder god, the rice eater, the fortune-teller, and the leopard; the most beautiful, by common consent,



French West Africa: principal ethnic groups (printed in bold italic capitals) and distribution of art production. **Key:** (1) Boundaries of French West Africa; (2) northern extent of Negro populations; (3) northern extent of funerary sculpture; (4) terra-cotta figurines; (5) stone figurines.

All the plastic arts of the Baga are associated with a secret society of classic type, the Simô, which preserves a unity among the varied and frequently warring factions. Worthy of mention are such masks for the dance as the *anok*, representing a bird with a long beak on which are small horns holding magic essences; the tall *maison à étages* masks used in initiation ceremonies (like those of the Dogon and Mossi); the *banda* mask, which is a polychrome, stylized crocodile's head with long horns and a human nose and eyes; and especially the large *nimba* mask representing a bust of a woman, which seems to be associated with fecundity and fertility. Sculpture, properly speaking, is also associated with the Simô and consists of small standing male and female figures, chins on their hands, whose facial expressions recall the *nimba* mask, as well as drums supported by figures of this style. Bird themes recur in the crests of masks and in the high-relief sculptures on pierced wooden panels placed in young bachelors' houses.

Along the coast, imitations of the Portuguese colonial style in architecture can be seen in the use of exterior staircases of adobe, flanked with balustrades and railings of wood cut out to imitate wrought iron.

is one said to represent the first sculptor. Apart from masks used in Poro rites, there are "comic" ones (the doddering old man, the too-acquiescent girl, and the stammerer) and small ones 3 to 4 in. high, representing the "double" of the bearer, which are real portraits executed during his lifetime and are called *ma* masks. In all this work a great stylistic variety is evident, ranging from the Dan masks, which in their purity of design seem idealized portraits, to those of the Guere-Wobe type, whose features are constructed in separate masses projecting on successive planes. No figurines are found among these tribes, but all of them, especially the Dan, make fine utensils, among them some superb rice spoons.

The culture of the Baoulé and the Agni is similar to that of the Ashanti of Ghana and belongs within the sphere of Guinean civilization. As well as ritual objects of sculptural worth (masks, figurines, drums, etc.), there are also many carved objects which the Baoulé themselves appreciate simply for their esthetic value: bobbins, combs, hairpins, circular or rectangular stools, and doors with human or animal figures in bas-relief. The Baoulé masks are varied, but their function in public life is little known. The Gu mask represents a human face with shiny, black, modulated surfaces subtly varied;

the Kakagye, or Guli, mask shows a stylized oxhead painted red and white; the Janus-faced Do mask, protector of the village against enchanters, has two faces painted red and white and is crowned with a small figure of a leopard. The jewelry is of excellent quality: rings, bracelets, and ankle rings in bronze, copper, and sometimes gold. There are also, in gold, beautiful mask-shaped pendants showing the faces of dead or captured chiefs, which were once hung from the sabers of victorious kings; horned masks probably connected with the worship of the god Nyamye; and pendants in the shape of round or rectangular plaques. The Baoulé also make weights for measuring gold dust similar to those of the Ashanti. The Agni women make fragile earthenware figurines, portrait-statues of kings or noblemen modeled at the deathbed, some of which date from the 17th century. The Guro have been influenced by the Baoulé; they have carved bobbins and certain types of polished and often polychrome wooden masks embellished with horns or crowned with birds.

The Senoufo have masks and figurines (now largely exported by Europeans) carved in a kind of ebony that becomes hard and black with age and colored with a black dye applied on a red base. The best work stems from the secret society Dô (literally, "secret"), or Lô. There are wooden *gbon* masks of huge animal heads, endowed, according to the Senoufo, with superhuman powers, especially against sorcerers. Apart from "fecundity fetishes" for marriageable young girls, today considered no more than dolls, there are small male and female coupled figures used in divination and ointment boxes whose covers are decorated with the bird motif. The Senoufo also know a crude variation of the *cire-perdue* method of casting.

Togo and Dahomey. Artistically speaking, Togo and Dahomey are practically indistinguishable. The foundation of the Dahomey kingdom, between 1600 and 1625, can be traced to an Ewe tribe of Togo, the Fon, who found here Yoruba people whom they called Nago, and it is often difficult to tell whether a work from Dahomey is of Fon or Nago origin. Among the arts of the region wood sculpture was most closely allied to religion and produced statues of gods, figures of protecting geniuses, objects for divination, and statuettes of twins (*ibéji*). But it also had a secular use in the carving of thrones, emblematic statues of kings, and *recados* (Port.) — scepters of wood, metal, or ivory, given by the king to his chiefs and bearing his coat of arms and an emblem alluding to a saying or an event in his life. The statues of kings are similarly emblematic: King Glele is pictured as a man with a lion's head, alluding to an utterance of his at the time of his coronation.

Among the objects used in Fa divination (a ceremony of Moslem origin introduced by the Yoruba at the beginning of the 18th cent.), there are beautiful wooden vessels with colored bases representing a snake, a bird, or a chief on horseback surrounded by his musicians, and trays whose edges are carved with different figures in intaglio. Metal sculpture is sometimes of great size and partly made of European sheet metal and bolts, as are the famous statues of Gu, the god of war, in the Musée de l'Homme and the collection of C. Ratton in Paris. Lesser figures in brass or copper represent groups or scenes of everyday life. Finally, there are the *asen*, or *asé*: ritual receptacles of iron or, more rarely, of brass, made by the smith-jewelers of the Houtoudji quarter of Abomey and crowned with animal, human, or other devices or allegorical significance, also of metal.

In Dahomey, clay modeling also is important, and the best-known examples of this statuary are the polychrome figurines of everyday people in the Ethnographic Museum in Geneva. The earthen figures placed in houses or in the streets, which E. Foa considers divinities, are probably analogous to the representations of Legba (divine messenger) photographed in 1931 by the Dakar-Djibouti Mission in the sanctuaries of Matchatin and Menodo (Ouidah). There is abundant pottery, such as covered jars and lamps of Yoruba origin, with sculptured ornamentation of various small human figures. But the masterpieces of Dahomean modeling are undoubtedly the framed bas-reliefs that adorn the outside walls of the "royal palaces" of Abomey. These bas-reliefs, illustrating sayings of the king, historic or religious events, or themes of fantasy, are one of the rare examples from Negro Africa of the use of a plastic art with architecture. Each bas-relief forms a picture 29 in. square; its figures are of sun-dried earth painted with vivid colors of vegetable origin. The doors of the royal palaces of Abomey are also carved with emblematic motifs in high relief.

The Fon have two pictorial arts: the carving of calabashes (vessels made of gourd shells) and the making of appliqué fabrics. The calabash decoration is ranged in several tiers, the most important of which shows stylized or deformed animals and is an allegorical message from the artist to the recipient. The appliqué fabrics, executed by an artisan caste of Abomey, are most often linked to funerary art; they are hangings with appliqué cutouts of vivid colors whose motifs correspond to the words of a eulogistic song written by an intimate friend of the deceased, and constitute true pictograms.

Upper Volta. Three tribes show artistic activity in this territory. They are the Lobi, living in the bend of the Black Volta; the Bobo, north of the bend; and the Mossi, settled in the Ouagadougou region.

The Lobi comprise a group of widely scattered peoples: the Koulango, Dorossé, Gan, Dian, Teguessié, the Lobi themselves, and the Birifor. Their sculpture is poor. A three-legged stool, often decorated with a helmeted head, is very common among them. The so-called Lobi masks, according to Kjersmeier, are copies of Baoulé masks, of little artistic value and foreign inspiration. The metal jewelry of the Lobi, the Bobo, and the Mossi often has vegetable motifs, and there are copper pendants, used as prophylactic charms, in the shape of a sheathed knife, a horned viper, or a chameleon.

The Mossi are within the sphere of the Sudanese savanna cultures, and their art is the result of borrowings both from former inhabitants of the area and from neighboring peoples. They have wooden ceremonial masks, of which the *wando* (singular, *wadngo*) are found only in villages inhabited by craftsmen, particularly smiths. Carved in the soft wood of the kapok tree and painted black, red, and white, this mask has a highly stylized face and is surmounted by koba antelope horns (straight or curved according to the sex of the mask) and a tall, thin palette, pierced and carved; the whole is reminiscent of the tall Dogon mask. If the mask is feminine, a small female figure is sometimes attached to the palette. There are also old and rare ancestor statuettes, as well as copper figurines made by the *cire-perdue* method showing scenes of daily life. These last, produced for tourists, have little esthetic interest.

The Bobo, according to tradition the oldest inhabitants of the region, are noted especially for an art form linked with architecture — a combination, as already noted, very rare in Negro Africa. H. Baumann describes vividly colored figurative or geometric paintings resembling those of Portuguese Guinea and the banks of the Benue, and mural decorations in clay bas-relief (twins, couples in erotic poses, animals, and reptiles) intended to bring about fertility and abundance. Little is known about the masks, which come mainly from the Bobo-Dioulasso region. They are used for funeral ceremonies and agrarian rites and, although usually zoomorphic, sometimes represent people, for example, the Fulah girl. Others, like those of the Mossi, are reminiscent of the tall Dogon masks. The Bobo produce finely carved stools, in which H. Lehmann sees an affinity with the *duho* of the Antilles, and figurines made by the *cire-perdue* method that resemble those of the Mossi.

French Sudan and Niger. The most important tribes, artistically speaking, are the Bambara and the Dogon. The Bambara, descendants of the founders of the great Sudanese empire, live today in an agricultural society in which the smiths, who are of a despised caste but are necessary because of their religious role, are also wood carvers. Their art is varied: ancestor figures, masks, musical instruments, dolls, puppets, and decorated everyday objects. Lem points out three areas of production: the Bamako region on the Niger, the Fourou region around Bougouni, and the Kinian region, astride the districts of Sikasso, Koutiala, and Ségou. The masks are connected with youth organizations (*ntomo*) or such traditional societies as the Komo in the Ségou region, the Kore in the Bani, and the Nama in the Beledougou. The *ntomo* mask is anthropomorphic, and those of traditional societies are generally zoomorphic, representing lions, monkeys, hyenas, and other animals. The headpieces of masks (*tyi wara*) worn by members of the Fla-n-kuru or the N'tieko societies in agrarian rites depict the "ancestor chain" or highly stylized, finely wrought male or female antelope. Ancestor figurines seem to have become quite rare; in 1935 Lem collected some beautiful old examples. Among everyday objects there are carved wooden locks of a type spread by Islam from the Near East and Kabylia to Tanganyika and Chad. Those of the Dogon and Bambara depict human beings, crocodiles, lizards, tortoises, or crescent moons.

Dogon art is among the best of French West Africa, at least in its religious implications and in the number of representations it embodies. The Dogon live in the cliff region at the center of the Niger bend. United in an agricultural, patriarchal society, they have a complex religion with an extremely precise ritual underlying all their activities. Their art, of essentially religious inspiration, includes masks, ancestor figures, and everyday objects decorated with sculpture. Their rock paintings cannot be definitely termed archaeological because they are still being painted over for ritual purposes during certain ceremonies. Dogon figurines, like those of the Bambara, have become very rare; the work of trained smiths, these anthropomorphic ancestor figures were used in funerals and considered sacred. Their masks, made of bark, braided fiber adorned with cowries, or wood, are used today in elaborate ceremonies of initiation or at funerals but no longer in agrarian rites. The wooden ones are sometimes spotted or decorated with black, white, or red triangles. They represent social types (the old man, the old woman,

the hunter, the shoemaker, the magician, and the young girl), animals (monkeys, crocodiles, different species of antelope, hyenas, hares, or lions), and spirits. There is a tall mask, called *maison à étages*, surmounted by a long plank of colored, cutout wood that may reach a height of 17 ft., and a mask called *kanaga* in the shape of a cross of Lorraine. All these masks are the work of nonspecialists: proof, according to Leiris, of the existence of a real popular, as opposed to a professional, art. The mask societies, taken together, are called *avou*, according to Griaule, a word equivalent to the Greek "cosmos."

Ritual material (rhombs, vessels, musical instruments) and household objects (locks, shutters, doors, butter boxes) have symbolic designs illustrating some aspect of the Dogon cosmogony.

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Jean LAUDÉ

COLONIAL CONSTRUCTION. European colonization, begun in the 15th century with the Portuguese, was continued, in turn, by the Dutch, English, and French. It has left many traces in Senegal, French Guinea, Ivory Coast, Mauritania, and Dahomey: fortifications, new cities built along standard patterns, and, particularly in the 19th century, civil and religious buildings. Today most of the urban settlements, especially along the coast, are quite modern and are rapidly developing according to well-regulated plans.

Some places and monuments of historical interest in Senegal are the mosque on the small island of Gorée, the Estreco fort, the castle of St. Michael, the fortifications of Méringhen, Mount, Thiès, and Rufisque (19th cent.), various houses and gardens of the 17th and 18th centuries at Dakar, and the 19th-century city plan of Saint-Louis (founded in 1658). In French Guinea important architectural remains are found on the island of Roume (15th cent.), at Kerouané and at Timbo. On the Ivory Coast, at Tabou, there are ruins of Portuguese buildings, whereas the French fort of Dabou remains almost intact. In Dahomey, French and Portuguese blockhouses are preserved at Ouidah (17th cent.), as well as the walls and "royal palaces" of Abomey, the latter having been made into a museum of local art. A city typical in appearance is Porto-Novo, formerly the seat of a native kingdom of the 18th century. In the mountains of Mauritania, the inhabited centers called *ksar* present interesting examples of native construction: Chinguetti, Oudane, Tichitt, Nema, Oualata, and Atar. In Upper Volta there are ruins at Gaoua and at Ouagadougou, founded about the year 1000. The buildings in French Sudan are of particular interest; the local architecture, for instance at Djenné, was influenced by the Moroccans. A fort at Médine (Kayes) and one at Bafoulabé bear witness of the activity of Faidherbe and Galliani (19th cent.). At Gao, seat of the Songhai kingdom, there is preserved a beamed pyramid of brick, the tomb of the Askia Mohammed Ture (1493-1528), as well as a typical market place. Djenné, one of the most beautiful cities of French Sudan, has narrow, winding, streets, adobe houses with terraces, and a

mosque with minarets. Tombouctou, a flourishing city in the time of the Songhai, has square houses with decorated doors and contains an old mosque and the remains of the old city surrounded by walls. Mention should also be made of Bamako, a modern city with a native quarter; Mopti, built on three islets in the Niger, with square houses of ocher earth and a celebrated mosque; Kayes, with tall buildings in grey stone; and Sikasso, with ruins of the old ramparts.

Illustration: 1 fig. in text.

AFRICA, NORTH. Under this heading are grouped the modern states of Libya, Tunisia, Algeria, Morocco, and Río de Oro, which are all bounded by the Sahara on the south and consequently have always gravitated toward the Mediterranean. Moreover, during considerable periods of their long history they have had a common civilization, with the result that to some extent they form a cultural unit.

SUMMARY. Successive cultures of North Africa (col. 62): *Introduction; Prehistory and protohistory — the indigenous peoples; The Phoenicians and the Greeks; The Romans; The Vandals and the Byzantines; Islam; Some aspects of the period of European influence.* Libya (col. 79): *Prehistoric centers; Historical centers: a. Cirenaica; b. Tripolitania and Fezzan.* Tunisia (col. 91). Algeria (col. 105): *Prehistoric centers; Historical centers.* Morocco (col. 124). Río de Oro (col. 129).

SUCCESSIVE CULTURES OF NORTH AFRICA. *Introduction.* North Africa, situated in the temperate zone, has an extensive Mediterranean coastline and on the south is cut off from the rest of the continent by the immense Sahara Desert, which makes overland communication with central and southern Africa difficult. As a result it has naturally turned toward the countries of Mediterranean Europe and the Middle East. In every epoch its easily accessible coasts have tempted navigators in search of new commercial outlets with such sheltered gulfs as Gabès, Hammamet, Tunis, Bougie, Oran, and Melilla, such deep channels as that of Bizerte, and numerous inlets suitable for ports.

A mountainous elevation, consisting primarily of two long, parallel ranges, the Maritime Atlas and the Saharan Atlas, with plateaus between them, cuts off the precipitation originating in the north and northwest. Only the Algerian coastal region and northern Tunisia east of the line of mountains enjoy a rainfall sufficient to assure regular harvests. On the plateaus, on the other hand, the rainfall is extremely irregular, and on the far side of the Saharan Atlas there is virtually no precipitation. By contrast, Morocco, to the west, has a broad Atlantic coast that assures sufficient irrigation for the whole *meseta*. An easily passable strait divides it from Spain.

These fundamental facts readily explain the path taken by the various civilizing influences: (1) currents of Middle Eastern origin — Phoenician navigators, Byzantine and Arab invaders; (2) currents from southern Europe — from Greece, particularly Rome, and later France; (3) currents from the West — especially the Vandals and the Moslems of Spain.

Despite its great size and the vicissitudes of history, North Africa has a certain cultural uniformity because of the people who have inhabited it from the beginning of historical time — the Libyans, or Berbers. Its unity was only relative, however, since the divisions and groupings of tribes within it were many and subject to frequent change.

The various civilizations found a terrain well suited to their development, especially in the regions in which the climate was favorable — the Tunisian Sahel and the wide plains and river valleys of Morocco — though sometimes they succeeded in penetrating the mountainous sections as well. The locations of some cities appear to have been determined by the single geographic factor of distance from the coast; Kairouan, Achir, Kalaa, and Tinnil are examples.

In various regions, there are fairly abundant remains of the cultures that flourished before historical times, but it is not possible to reduce them to any unity or to relate them in anything more than a provisory fashion to the better-known cultures of adjacent countries (see PREHISTORY; PALEO-AFRICAN CULTURES). It is, however, impossible to apply the criteria of dating employed for other areas, such as Europe, to the African regions with which we are dealing. In these regions it is not unusual for ways of life and monuments that we are accustomed to attribute to the earliest eras of human existence, the Paleolithic and Neolithic periods, to have persisted well into the historical age, sometimes up to the time of Roman domination.

A final consideration, of a geographic nature, pertains to the problem of human grouping. Tunisia appears to be characterized by an ancient and highly developed civilization of an urban type, whereas

Algeria, by contrast, is a rural country, and Morocco maintains a certain balance between the two ways of life. The fact that the rural element is customarily obstinately conservative, whereas the urban element tends to be open to innovation, clarifies the distinction between the two types of artistic expression in North Africa: on the one hand the rural art of the Berbers, and on the other the urban art strongly influenced by the East. The former shows an extraordinary continuity over the years; the latter has been affected by all the successive civilizations of North Africa.

Prehistory and protohistory — the indigenous peoples. Although certain sporadic discoveries in North Africa can be classified as products of the Lower Paleolithic era (Acheulean, Mousterian, Aterian, etc.); the Magdalenian civilization is completely absent in Africa), the industry of the Upper Paleolithic age is characteristic of the entire region. This period is called "Capsian," from Capsa (present-day Gafsa in Tunisia), the place where it was first recognized. Some prefer the more comprehensive term "Gaetuli" (the Roman name for the Libyans who inhabited the semidesert region lying between the coastal zone to the north and the Sahara to the south); others would use two terms to distinguish the two geographical regions — "True Capsian" for the eastern region from Cirenaica to Tunisia and "Ibero-Maurusian" for the western region, including Algeria and Morocco. The latter alludes, as the name suggests, to the analogous culture in southern Spain. In fact, according to Vauflrey, the True Capsian occupied a rather limited area made up of a part of southern Tunisia and a small contiguous area in Algeria (the limitation may be explained by the small number of people who would carry such a culture into Africa, apparently from western Europe). To the "Upper Capsian," of which the Ibero-Maurusian would comprise a parallel phase, Vauflrey assigns an area extending farther north but not to the sea and toward the west only as far as the meridian of Algiers. On the other hand, Vauflrey recognizes a broad expansion of the Maghrib in the Neolithic age, from the Gulf of Gabès to the shores of the Atlantic, which apparently endured for a considerable time — until the Phoenician colonization. Tripolitania and Cirenaica are not included in Vauflrey's conclusions. The evidence gathered in Tripolitania up to the mid-20th century is slight and fragmentary and does not come from any systematically explored site. In Cirenaica, the grotto of Hagfet et-Tera, the only methodically excavated site, revealed products that are quite distinct from although in some ways analogous to the products of other Upper Paleolithic cultures in Africa and elsewhere.

As a result of the many explorations conducted in the southern part of the region, a great deal of material was discovered in the decades immediately preceding the mid-20th century. Though some sections of this region have been relatively little studied by archaeologists, it is safe to say, nevertheless, that the artistic manifestations themselves extend through the whole region, from the Egyptian border to the Atlantic. Particularly notable groups are those at El-Auenat in southern Cirenaica, at Wadi el-Agial and Fezzan in southern Tripolitania and the region of the Gulf of Sidra, and at Tassili in the south of Algeria to the west of Chad. In the western region, from Mauritania (see AFRICA, FRENCH WEST) to Algeria, incised representations predominate; in the eastern area, and especially in Tassili and in the El-Auenat massif, monochrome and polychrome cliff paintings are associated with the petroglyphs.

Although this material has been studied and classified according to subject, technique, and style, it is not yet possible to date it with certainty or even to place it precisely in relation to the customary prehistoric and historical periods. Even the relative chronological order is still hypothetical. It is, therefore, impossible to decide, except in the case of the most recent products, which populations produced them.

In the most general division, that between products of the pre-cameline and cameline periods, so named because of the absence or presence of representations of camels (or more precisely of the dromedary, which was introduced into the area in the historical period, perhaps even as late as the Roman period), the carvings and the paintings in which there appear indications of tropical fauna that flourished during a period of humid climate (hippopotamuses, crocodiles, giraffes) are considered to be the older ones. Nevertheless, contrary to the assumption of some scholars, it does not seem that even these can be extended back into the Paleolithic era but only into the Neolithic, when climatic conditions favorable to this type of fauna must have persisted at least in some areas. In fact, at the beginning of the Cenozoic age — the present geologic period — as a result of the frequent rains following the disappearance of the last glaciers, many sections of the Sahara were covered by flourishing arboreal vegetation and were inhabited by tropical fauna. The climate also permitted areas of settlement and stopping places for nomadic peoples in the very locations where incised and painted representations are now found. The representations are in a lively, naturalistic style

that compares favorably with that of representations of Franco-Spanish Paleolithic art. P. Graziosi, with the support of other scholars, distinguishes two principal groups in the sphere of pre-cameline art and in painting in particular. The older group may be attributed to hunting peoples, and the more recent, in which herds of cattle and horses appear, to pastoral peoples. Some of the pastoral representations, which continued up to the cameline age, resemble the preceding ones in style, but they gradually sink into miniaturism or into increasingly rigid schematization in which the figures are ultimately composed of two tangential triangles. At midcentury, a more complex and varied sequence of styles was being recognized as a result of new discoveries of rock pictures in the area of Tassili in the Azger. The Garamantic peoples, identified today as Berbers, are believed to have produced the most recent of these representations, some features of which — carts drawn by oxen or horses, men whose heads are adorned with feathers — parallel the descriptions of these peoples provided by Herodotus and other Greek and Roman writers.

With the exception of this one ethnic correspondence, nothing is known of the sources and parallels of these representations or of their relationship to those of other regions of the Mediterranean or Africa. There is no doubt that they bore some kinship, on the one hand to the products of the Iberian peninsula and, in more recent groups, to those of predynastic Egypt and Crete, and on the other hand to those of other regions of the Sahara and to eastern and southern Africa (Bushmen). However, it is more difficult to say by which reciprocal influences the relationships were determined and to specify the center or centers from which this art spread (see AFRICAN CULTURES; PALEO-AFRICAN CULTURES). Indeed, among the peoples who from the beginning of the historical period have inhabited the parts of North Africa in which the cliff representations have been found, all knowledge connected with the prehistoric production of incised or painted figures has disappeared. Probably these figures should be attributed to Paleo-Mediterranean racial groupings whose ethnic characteristics persist in the Libyan-Berber peoples. Of the desert nomads, the Tuaregs have preserved a greater number of archaic elements, but, like the other peoples of the area, they have no written or oral tradition concerning the cliff art or the people who produced it.

Similarly, in the Neolithic period there first appeared examples of the type of megalithic monument called the "dolmen," which was constructed in this region by the Libyans up to the Punic and Roman era, together with other types of tombs, always of dry masonry — tumuli, grave circles, and small cylindrical towers.

Pietro ROMANELLI

The present-day remains of the indigenous population of North Africa are called Berbers, a somewhat imprecise term, since it does not refer to an authentic ethnic or cultural unit. Nevertheless these groups, so diverse from the point of view of composition, have inherited a common language and common customs rooted in prehistory and in part reflected in their artistic production.

The Berbers are migratory peoples who move along well-defined routes according to the needs of their cattle. Alternatively they are settled peoples living generally in the mountains or in the Sahara. Their types of habitation vary from region to region, but the most original are the following: (1) In Morocco (Grand Atlas region), a great number of *qasba* have survived. This is a sort of collective granary with very high walls and many battlemented towers, frequently built in the form of a truncated pyramid. These buildings resemble antique fortresses, the pressed-clay walls often dark red with the upper part whitewashed. (2) In Algeria, the villages in Kabylia consist of houses, grouped on the most inaccessible hilltops, which open on a narrow court and are covered by a semicircular tile roof. In the Mزاب district there are tall white minarets rising above the cities, which are laid out on terraces. In the Aurès Mountains, the houses are of dry masonry with flat roofs and recall those of the Moroccan Grand Atlas. (3) In Tunisia, in addition to the cave dwellings of Matmata, found also in the Tripolitanian Jebel, the collective granaries of Médenine and Métameur and the rural houses of Djerba should be noted.

The majority of these buildings are decorated with original geometric motifs, among which the isosceles triangle predominates. There are lines of alternate triangles, triangular battlements, rosettes in triangular form, lozenges enclosing a cross, open triangles, squares, and rectangles. The wooden doors are also frequently decorated with simple geometric figures.

Berber art is also revealed in numerous domestic objects: in pottery vessels, in fabrics, and in wickerwork; and it serves the purpose of personal adornment in tattoos and in jewelry.

It is safe to say that there exist "masculine" and "feminine" Berber art forms, the former completely unchanging through the years, the latter sometimes undergoing innovation. For example, the decorative motifs employed by wood sculptors and jewelry makers

("masculine" techniques) differ substantially from those used in weaving and in vases modeled by hand ("feminine" techniques). In the "masculine" motifs, curved lines are used successfully; the "feminine," partly for technical reasons, are usually more stylized and abstract.

Naturally it is impossible to trace the origin of these decorative elements, which are remarkably similar to motifs in the most diverse and distant civilizations; but it is probable that the sculptors of wooden jewelry cases are sometimes inspired by local Byzantine decorations, and this is certain in the case of the sculptors of doors. The Berber jewelry makers have unquestionably felt Moslem influence, both directly and by way of Spain (see SAHARAN-BERBER CULTURES).

LOUIS GOLVIN

The Phoenicians and the Greeks. For Cyrenaica (ancient Cyrenaica), the part of North Africa east of the Gulf of Sidra, the historical period began with the era of Greek colonization. In the area to the west — Tripolitania, Tunisia, Algeria, and Morocco — it is determined by Phoenician colonization. Greek colonization began with the founding of Cyrene about the middle of the 7th century B.C., Phoenician colonization before the end of the 3d millennium B.C. The difference in the colonizing peoples produced a cultural distinction between the two regions which lasted to the end of antiquity, that is, until the time of the Arab invasion, although from the time of the Roman conquest both were part of the same political unit, as they returned to the Byzantine empire following the brief period of Vandal domination.

The region to the east of the Gulf of Sidra followed the vicissitudes of Greek culture from the archaic through the classic, Hellenistic, and Roman periods. In the first main period, comprising the archaic (q.v.) and classic ages, the monuments of Cyrenaica — actually of Cyrene (mod. Cirene), since today we have sufficient knowledge only of these — are modeled largely on the forms and tastes of Greece proper; only ethnic relationships or more direct contacts with Greece could at this time have produced a greater affinity with Hellenistic products and creations. Among the oldest sacred structures whose remains have been recognized beneath their extensive and sometimes radical later transformations, the plan of the first Temple of Artemis in Cirene recalls the Temple of Prusias in Crete, and, in structural technique, the older Temple of Apollo recalls the Temple of Hera at Olympia. In fact, with the exception of the great Temple of Zeus on the eastern hill of the city — dating from the 6th century B.C. or the first half of the 5th, a date which should perhaps be reconsidered in the light of recent research — none of the architectural monuments of this period present a trace of those forms, alien to the harmonic balance of the creations of Greece proper, that are found in some buildings of Asia Minor, Sicily, or Magna Graecia (southern Italy).

In sculpture, the archaic period in Cyrenaica produced objects of high quality, for the most part of marble, a material which the region lacks completely. With the exception of some older pieces that recall works of the island of Thera or of the eastern Aegean Islands, such products consistently show the inspiration of Attic models. Whether they are imported examples or the products of local shops, they prove beyond doubt that from the earliest times Athens was the most significant source of influence on the artistic activity of Cyrenaica.

This does not exclude the fact that practical requirements or religious traditions determined the creation and persistence of certain artistic forms that can be considered native to the region or at least much more common there than elsewhere. This is evident in the diverse character of sepulchral monuments: the monumental, free-standing sarcophagus, the rectangular or circular *heroön*, and the rock-cut chamber with an architectural façade. Arranged along the steep banks of the rivers that cut into the sides of the plateau, these chambers create an ornamental frieze about the city. Again, it is evident in that type of funerary sculpture, whose significance is as yet unexplained, which gradually, without abandoning its primitive form, develops from a featureless head or bust to a veiled female shape, representing only the upper part of the figure.

In the Hellenistic period (see HELLENISTIC ART), Alexandria, and to a much lesser degree Rhodes and the other artistic centers of Hellenism, joined Attica in exercising an influence on Cyrenaica, though without entirely supplanting it. This is not surprising, considering the geographic proximity of these centers and especially the common rule of the Ptolemies, under which Cyrene, directly or indirectly, came at this time. The coastal cities, especially Ptolemais and Apollonia, enjoyed a period of expansion whose imprint they retained throughout the Roman period.

The Jewish revolt in the last years of Trajan's reign caused a decisive break in the cultural and artistic development of Cyrenaica. The violence of the rebels and the no-less violent repression by the Roman government inflicted a blow on the region from whose effects

Hadrian and his immediate successors tried in vain to revive it. To judge from archaeological evidence, the city that suffered most was Cyrene, whose monuments, beginning with the great Temple of Apollo, were radically reconstructed as a result of the revolt. However, their new forms were totally different from their previous ones. The architecture of this period is clearly distinguished from that of the preceding period by a profound alteration in the fundamental canons of Greek architecture (cf. the third Temple of Apollo) and by the introduction of new forms, drawn especially from the East, which could be called "baroque." In sculpture, although here, too, there appear products of the school of Aphrodisias in Asia Minor, there is nonetheless an increasingly prevalent orientation toward the workshops of Alexandria and Attica. The result was the perpetuation, under this aspect, of the distinction between Cyrenaica and Africa west of the Gulf of Sidra, or perhaps west of Tripolitania, which has a position intermediate between the first and second culturally as well as geographically. This distinction was greatly accentuated after the division of the Roman empire, which caused Cyrenaica to gravitate toward Constantinople and western Africa toward Rome. Alexandria and Athens remain the two centers of cultural and artistic inspiration for Cyrenaica; however, little life and activity remained in the region, reduced almost to a mere coastal strip, while the interior was increasingly subject to the incursions and raids of the indigenous Libyan peoples. A study of the writings of Synesius, bishop of Ptolemais, a product of the school of Hypatia, the Alexandrian Neoplatonist, who remained imbued with Neoplatonism even after his conversion to Christianity, is very revealing for a knowledge of the Cyrenaican area during the 4th and 5th centuries. Building and artistic activity were extraordinarily modest in this period, the only examples worthy of note being the Christian churches, all of which were built on a basilican plan. Many were constructed of materials removed from other buildings and were adorned only with mosaics. In these are repeated, without any particular distinctive quality, the customary motifs of the decorative and figural symbolic repertory created by the artists of Byzantium and Asia Minor.

Greek colonization in Cyrenaica, as elsewhere, was effected on the basis of individual cities. Cyrene and Barca, on the plateau, whose ports in time developed into the two cities of Apollonia and Ptolemais, and Teucheira and Euesperides (Berenice), on the coast, were the cities founded by the Greeks in the region. Otherwise, Greek influence was almost nonexistent. This is not to say that relations between the Greeks and Libyans were lacking; indeed, we know from the constitutional charter of Cyrene in the 4th century B.C. that mixed marriages were frequent. Such relations, however, did not have any notable consequences for the state of Libyan civilization and did not appreciably influence their mode of life. Hence the absence of urban or quasi-urban centers, except for those named above, and the meagerness of their isolated monuments, with the exception of occasional tombs; hence, too, the absolute lack of any trace of Greek influence in works from the hands of the native Libyans.

At one time the rows of upright stones seen on the Cirenaican plateau, especially in the region near Cirene (Beda, Messa, El-Safsaf), were attributed to these people and to this period if not to an even more remote one. A more careful consideration excludes both an origin distant in time and, even more, any particular religious significance for such arrangements. In all probability these are the remains of enclosing walls constructed of large, upright stones originally joined together by a web of smaller material that has been lost. Apparently these walls belong to the Roman period, when, more than at any other time, a system of real property was imposed on the region.

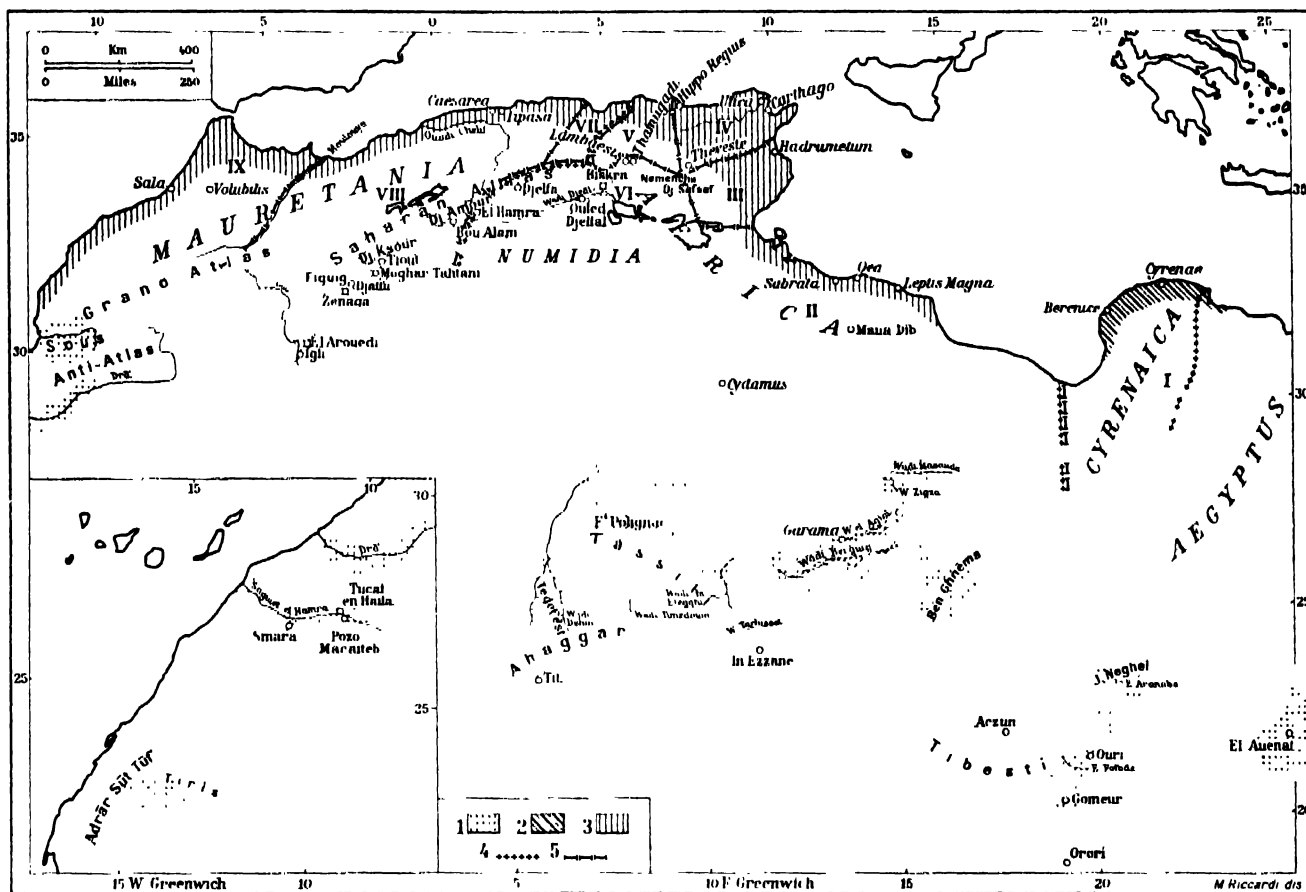
The crude sculptures of the grotto of Slonta, however, the figures forming several rows and usually grouped in threes, should be considered as an expression of native art. But it is difficult to establish either the significance or the date of these works. The grotto paintings at Agfisa, which probably date from the 3d century, constitute a unique example.

In the regions to the west of the Gulf of Sidra, colonization by the Tyrian Phoenicians, which began, as we have seen, before the end of the 2d millennium B.C., was carried out through the establishment of several commercial centers — Utica, Hadrumetum, Hippo Diarrhytus, and Leptis (later called Leptis Magna). Because these centers attracted the native Libyan population of the adjacent territory and because they were good places for trade, they gradually developed into cities. One colony was destined to rise to the position of the metropolis of northwest Africa: this was Carthage, whose founding is traditionally placed in 814 B.C. The development of Carthage was favored by its situation at the point of easiest passage from Africa to Italy and thence to all Europe, at approximately the midpoint on the Mediterranean coast, and by the fertility of the land lying immediately behind it.

The original name of Carthage — Qart Hadasht, "New City" — indicates that either at the same site or nearby the Phoenicians must

previously have founded another trade center. We have no monumental evidence of this older city founded by the Phoenicians, who came from the east carrying not only the rather modest products of their own industry and culture but also the products of the more advanced and creative peoples of the eastern Mediterranean — those of Cyprus, Greece, and Egypt. But archaeologists are in the process of following the development of Carthage from its beginnings by means of the numerous cemeteries which have come to light throughout the whole area and which are chronologically distributed from the 7th century B.C., and perhaps also from the 8th, up to the fall of the city in the middle of the 2d century B.C. On the other hand, the "tphet" of Salamambo belongs to a period prior to the oldest

Sea and into the southern part of the Iberian peninsula. It was, of course, precisely this extension of its interests outside Africa that caused the conflict with Rome which was to bring about the downfall of Carthage. But though its trade was predominantly maritime, the influence of Carthage was nonetheless a determining factor in the case of the native Libyans — for all the Libyans, and not merely for the small number who came under the direct dominion of Carthage. The Libyans, although they recognized the Phoenicians and Carthaginians as foreigners, gradually accepted their language, religion, and social order. So it was that at the end of the antique period the Libyans remained Punic, a cultural orientation that Rome never succeeded in overcoming. Yet the Punic civilization, like the Phoe-



Ancient North Africa. Key: (1) Areas of greatest concentration of prehistoric rock pictures; (2) area of Greek colonization; (3) area of Phoenician colonization and Carthaginian rule; (4) boundaries of Roman provinces in the time of Augustus; (5) boundaries of Roman provinces in the time of Diocletian. Provinces of Diocletian: (I) Libya Superior; (II) Tripolitania; (III) Bizacena; (IV) Proconsularis Zeugitana; (V) Numidia Cirtensis; (VI) Numidia Militiana; (VII) Mauretania Sitifensis; (VIII) Mauretania Caesariensis; (IX) Mauretania Tingitana.

tombs — indeed, according to some, prior to the establishment of the commercial center that preceded the city founded in 814 B.C. According to the earliest dating proposed for them, the ceramics of this area, which may be regarded as either Cycladic or Phoenician imitations of sub-Geometric Greek work, cannot have been produced later than the middle of the 8th century B.C.

The objects found in the tombs give evidence of the flourishing of Phoenician trade rather than of the artistic activity of the people, their accomplishments as artisans, or those of the descendants of their colonists, the Punic people of Carthage. The local products are, in fact, scarce, of poor quality, and generally imitative of imported ones, which are, in contrast, better and more numerous. These imports include proto-Corinthian vases, Egyptian scarabs, Etruscan water containers, and small Italo-Corinthian vases.

The conquest of the mother country by the Persians facilitated the independent development of Carthage. Situated at the midpoint on the long North African coast, Carthage dotted that coast with numerous colonies or minor trading centers, in order both to facilitate navigation and gradually to gather into its hands all the commerce flowing from the interior of the continent to the sea. It even pushed some of these colonies beyond the Pillars of Hercules, onto the shores of the Atlantic, with the intention, it would seem, of taking over the gold trade of the rivers that run to the south of the Atlas Mountains. Next it extended its influence to the great islands of the Tyrrhenian

Sea and into the southern part of the Iberian peninsula. It was, of course, precisely this extension of its interests outside Africa that caused the conflict with Rome which was to bring about the downfall of Carthage. But though its trade was predominantly maritime, the influence of Carthage was nonetheless a determining factor in the case of the native Libyans — for all the Libyans, and not merely for the small number who came under the direct dominion of Carthage.

The Libyans, although they recognized the Phoenicians and Carthaginians as foreigners, gradually accepted their language, religion, and social order. So it was that at the end of the antique period the Libyans remained Punic, a cultural orientation that Rome never succeeded in overcoming. Yet the Punic civilization, like the Phoenician one that had given it birth, was not an original culture in its own right. Its constituent elements, which it never succeeded in unifying organically, were derived from the other civilizations with which it successively came into contact (see PHOENICIAN-PUNIC ART). Carthage was destroyed in 146 B.C., so completely that very little remains, aside from the tombs and an occasional sanctuary notable chiefly for votive vases and for steles. Thus, little is known of its plan and of the nature of its buildings. However, some information is provided by literary sources and by the somewhat reduced and summary representations of those buildings, especially the temples, on the votive and funerary steles. On the basis of these steles, it would seem that in the earliest period, in the 6th and 5th centuries B.C., Punic architecture drew its models from Egyptian architecture, taking from it certain characteristic elements, such as the mold of the cornices, capitals without astragals, and the decorative use of the winged solar disk, but adding elements of different origin, such as the Phoenician palmette and the Aeolic or Ionic capital. Later the Carthaginians imitated the Greeks rather than the Egyptians, not merely in individual architectural elements but also in the form of the buildings and the general plan of the city. Strabo tells us that Carthage was the equal of great centers such as Rhodes, Massilia (Marseilles), and Cyzicus; and Appianus speaks of great colonnades surrounding the military port. Yet with respect both to the quality of the building materials (Africa has very few marble quarries, and

we do not know whether these were in use at this time) and to the esthetic accomplishments of the architects, such comparisons and dates are to be taken quite broadly, and Carthage must have been a rather crude imitation of the great Hellenistic cities of the east.

Still less can be said of the sculpture than of the architecture — of serious sculpture, at any rate. A certain Boethos of Carthage is mentioned in an inscription at Ephesus; but his name leads us to believe that he was of Greek origin, and there is no doubt that there were Greek artists in the African metropolis and that works executed elsewhere, especially in nearby Sicily, were imported there. In the case of the sarcophagi of the cemetery of St. Monica, we do not know whether they were made in Carthage or imported from outside; but in any event they were created to hold bodies of Carthaginian origin and religion, and they are clearly imitations of analogous monuments of Sicily and central Italy. The Carthaginian coinage is an imitation of the coins of Syracuse, with a female head reminiscent of that of the nymph Arethusa. The funerary and votive steles, on the other hand, are local products: they represent, within aediculae and little temples, figures and symbols peculiar to the Carthaginian world and are decorated with palmettes, ray wheels, and other motifs. In general they are quite modest products from which it is difficult to form an idea about the taste of those who commissioned and executed them; but they have certain stylistic characteristics that associate them with analogous works from a characteristically Libyan environment. This may be a fortuitous association, or it may be the effect of reciprocal influence; for there is no doubt that this civilization was diffused among the Libyans, as we have seen, and influenced them far more extensively than did the Greek culture. Certain Numidian and Mauretanian kings, such as Masinissa, Micipsa, and Juba II, tried to further the development of this Greek culture; but, as in Cyrenaica, Hellenism remained foreign to the mass of the population. Moreover, the very kings or leaders who looked on it with a lively sympathy were unable ever to accept it fully enough to abandon their own traditional forms in the monuments they erected, as is demonstrated by certain sepulchral monuments characteristic of Libyan Africa. Some of these — for example, that of Thugga, of the 2d century B.C., constructed apparently by an architect with a Punic name, and that of Kroub — are characterized by elements peculiar to Punic architecture. Others, such as the Medracen and the so-called "Tomb of the Christian Woman" (Tombeau de la Chrétienne, PL. 18), represent only monumental enlargements of a wholly indigenous form of sepulcher, the stone tumulus. In this enlarged version, however, the tumulus is decorated with Doric and Ionic columns, clearly imitative of Greek architecture, which was known to the Libyans through Carthage; and the sepulchral chamber within is more ample and complex in its formal development. This is especially true of the "Tombeau de la Chrétienne," in which the chamber is preceded by a long helicoidal corridor, one of the elements that have raised doubts as to whether the tomb is to be attributed, along with the Medracen, to a period prior to the Roman conquest, as has been commonly assumed, or whether it should be assigned to a much later period, especially since even at the end of the antique period the practice of building tombs in the form of stone tumuli was continued or revived in the *djedar* of western Algeria. These were built, in forms externally and internally more complex, by princes and chieftains of indigenous tribes who regained their independence with the fall of imperial authority.

The Romans. The establishment of Roman authority meant the entrance into the regions to the west of the Gulf of Sidra of a cultural force of greater vitality and of a civilization more easily assimilated by the peoples of this area than the Hellenic had been. Like the Hellenic culture, Roman culture was the patrimony of a minority, of the urban and bourgeois classes; but unlike Greece, Rome succeeded nevertheless in creating a large class of Romano-Africans — Roman and Italic immigrants, Romanized Libyans, and Punic peoples. The influence of this class was an important factor not only in North Africa but in the rest of the Mediterranean world as well. Rome achieved this less by violence — that is, through military conquest — than by the far more effective means of exploiting political and economic interests, and as a result of its own moral superiority. Thus at no point did Rome impose its language, religion, or customs by force; rather, the peoples themselves, albeit only small, select groups of them, gradually adopted voluntarily the Roman language, religion, and customs. In consequence, both externally and in the more significant aspects of its spiritual activities, the life of Africa was a Roman life (see AFRICAN-ROMAN ART).

The cities were Roman in aspect. The principal source of wealth in Africa, both under the Romans and before, was the cultivation of the fields; this the Romans, taking up a practice initiated by Carthage in its own small hinterland, encouraged throughout the empire. They perfected methods of cultivation, varying them according to the nature and climate of the various regions, coastal to

semidesert, and providing as much water as possible. In consequence, reservoirs, aqueducts, barricading dikes, and dikes for the diversion of rivers are among the most characteristic structures of Roman Africa. But although the primary source of Africa's wealth was agriculture, urbanism was highly developed. The cities, whose population and size depended on the degree of productivity of the surrounding lands, were the nerve centers of the area in the sense that African life, which was nourished in the country, found its expression in the cities in community activity, religious ceremonies, commerce, and entertainment. Consequently, the cities are of paramount importance for an understanding of the artistic activity of the region. Outside them there were only some wealthy feudal estates, such as that of Zliten in Tripolitania. These were few in number in the early days of the empire but more numerous from the 3d century on, and especially in the 4th and 5th centuries, when, embittered by economic crises and social struggles, the great landholders chose to abandon the cities and the burdens that civic duties entailed and to take refuge in country dwellings, which became in their turn autonomous centers of varied agrarian activities.

What knowledge we have of the form and complexity of these noble villas comes more from representations of them, such as those of the mosaics of Thabraca (Tabarca) and of Carthage (the so-called "Dominus Julius" mosaic), than from the ruins of the buildings themselves. As a result of their structural fragility, the villas have been destroyed, so that almost always the sole remaining elements are the pavement mosaics that decorated the various rooms. Much more plentiful and valuable is the evidence of urban construction, which is preserved in greater quantities and in better condition in Africa than in any of the other Roman provinces of the West. This evidence sometimes extends to an entire urban complex, giving information not only concerning specific types of buildings but concerning the layout of whole cities, whether of Roman origin or merely enlarged and developed in the Roman period from preexisting nuclei.

There is no doubt, in fact, that the old Phoenician and Punic coastal cities and the few major Libyan centers of the interior continued in existence after the Roman conquest. In rare instances their locations were changed. Carthage, destroyed in 146 B.C., after the failure of the attempts of Caius Gracchus and of Caesar to restore it to life by relocating it very slightly in order to circumvent the religious condemnation of Scipio, finally grew up again, through the efforts of Augustus, in the same area as Dido's city, where it remained until it was abandoned after the arrival of the Arabs. The new Carthage, like the other newly founded cities, of which the best-known example is the Trajanic colony of Thamugadi (Timgad), developed, according to the rules of Roman urbanism, on a rectangular plan; the old centers, on the other hand, were expanded with less conformity to the rectangular plan either by altering the primitive layout in so far as possible or by building adjacent to it new quarters arranged according to the Roman plan. Cities built along the slopes of hills, numerous in the interior, were adapted to the configurations of the terrain and extended along terraces, partly natural and partly artificial, which were joined by sharply sloping streets or by ramps or steps, as in Thugga.

The center of city life was the forum, which was sometimes, but not invariably, placed at the topographical center of the inhabited area. The shape of the forum of the Roman city in Africa was intermediate between the square form of the Greek agora and the elongated rectangular plan of the Italic forum. Basically rectangular, the difference between the long and short sides was nevertheless always rather slight. The plan was often irregular, because of the necessity to adapt or incorporate earlier elements or for reasons not yet clearly recognized. The Severan forum of Leptis Magna, although it appears to have developed originally according to a unified plan, also presents notable and singular anomalies in the disposition of various buildings in relation to one another and constitutes the most conspicuous example of a new forum adjacent to an older one. At Leptis such a creation was in all likelihood decreed by Septimius Severus, the emperor who promoted it in order to beautify the city with a complex of monuments rivaling those of the capital of the empire as well as those of the great Hellenistic cities. In other cases, as at Cuicul or at Thubursicum Numidarum, the location of the new public square resulted more or less naturally from the necessity of meeting the growing urban need for an enlargement of the primitive nucleus.

Around the forum and the porticos that usually surrounded it were the buildings most closely connected with the public life of the city — the basilica for judiciary audiences, the curia for meetings of the municipal senate, the principal temple, which was dedicated to the Capitoline triad or to the guardian deities of the city, and sometimes also the market. The basilicas have an elongated rectangular plan but do not always have the apse on the shorter side opposite the entrance wall. Rather, the apse sometimes opens from the longer side flanking the forum; this occurs necessarily when there are two apses, as in the Severan basilica at Leptis. The curia has a simple

rectangular ground plan at Thamugadi; it is flanked rather than preceded by a covered court at Sabrata; and at Leptis it has the ground plan and appearance of a temple.

With regard to temples, in addition to the purely Italic-Roman type on a high podium (which in some cases, as in that of the gens Septimia at Cuicul or in the capitol of Thamugadi, is extremely high) with a cella preceded by a deep forecourt and a prostyle usually having four but sometimes six or eight columns, there is also a type apparently dictated by the religious traditions native to the region, where the old Punic divinities, such as Tanith, Baal, and Eshmun, were still venerated by the majority of the population, albeit under such Roman names as Caelestis, Saturn, and Hercules. Divine triads were numerous among the Punic peoples and resulted in those temples with triple cellae, sometimes preceded by a large covered court as in the Temple of Saturn at Thugga. The temple of Caelestis in the same city is exceptional, a peripteros of Romano-Italic type with six columns at the front but enclosed in a temenos of semicircular form which some interpret as an allusion to the lunar character of the goddess.

Some typically indigenous sanctuaries, such as that at Thinnissut, are of a wholly different plan and type and are composed of a series of quadrangular halls irregularly divided by covered courts.

An older and more usual form of the market place is the quadrangular court with a tholos in its center, as at Gighis and Cuicul. At Leptis there are two of these tholoi; and later, as at Thamugadi, there is an apse curving from one side of the court. Bathing establishments are numerous throughout the region, and in most cities there are more than one. The larger of them — at Carthage (the Antonine baths), Leptis, Thamugadi, and Cuicul — are modeled on the great Roman baths laid out along a central axis, that is, with identical rooms disposed symmetrically on either side of an axis along which are the piscina, frigidarium, and caldarium. The minor buildings are more varied in number, size, and distribution of accessory chambers, with public and semipublic baths sometimes connected with thermal or medicinal waters. Such buildings were usually richly decorated, and some were truly museums of sculpture. The pavements were almost always adorned with mosaics and the walls and ceilings with mosaics and paintings. With the exception of the "sea baths" and "hunting baths" of Leptis, little remains of them.

The theaters, fairly numerous in both large and small Roman cities in Africa, have no especially significant characteristics. They were rarely so situated that the builders could take advantage of a natural elevation of the land for their incline, which usually depended instead on external architectural structure. The *scaenae frontes* with many rows of columns, such as the partially restored ones at Sabrata, Leptis, and Thugga, were grandiose. In some cases (Sabrata, Hippo Regius) the front of the platform was also decorated with sculpture. At Carthage, and perhaps in other major cities as well, in addition to the theater for dramatic representations, a second building, similar but smaller and covered, the odeon, was used for musical performances. The circuses and amphitheaters were less numerous and their characteristic elements even less noteworthy. The most elaborate was that at Thysdrus, called, not without reason, the "African Colosseum."

The houses at Thamugadi, Cuicul, and Volubilis are well known. In the wealthiest and most ample, the rooms are usually arranged around an open central court, which sometimes but not always had a portico (thus it cannot precisely be called a peristyle). This court was not very large and was often laid out as a garden with a fountain in the center. Among the rooms the tablinum was notable for its size and decoration. It lay along the back of the court and opened onto it through a wide doorway divided by two columns. The more modest houses, found especially at Thamugadi, vary in size, and their few rooms, always more than one to a single "block," are situated according to the allowances of space. Houses with partially or wholly subterranean dwelling rooms are typical of some cities, such as Bulla Regia and Thugga. This peculiarity was evidently dictated by the desire to protect the rooms from heat, as in the cave houses still numerous in the regions of the Tripolitanian and Tunisian Jebel.

Tombs that include a room excavated in the ground and accessible through a well standing before it are in the Punic tradition. The funerary remains were placed in open niches in the walls, as in the columbaria, but the arrangement was more irregular: the ashes were enclosed in glass or terra-cotta urns, stone funerary vases, or stone or lead caskets. The use of sculptured sarcophagi was not very widespread; on the other hand, there were numerous mausoleums constructed on a quadrangular plan with several levels and with an architectural decoration of columns and niches on the front and sides. Mausoleums in the form of an obelisk are peculiar to Tripolitania and southern Tunisia. Although this type had a long history in the region, as may be seen from the mausoleum at Thugga (2d cent. B.C.), it reached its greatest popularity during the Roman period. Particularly characteristic are the monuments in the cemeteries of

Ghirza in Tripolitania, which contain mausoleums not only in the obelisk form but also in the form of a peripteral temple, frequently decorated with crude reliefs of hunting or agricultural scenes (PL. 21) — a strange mixture of classic elements and local motifs which we find as well in the names of the Libyans who were buried there. These were partially Romanized Libyans who lived on the fringes or even quite beyond the confines of the Roman empire but who, despite an innate sense of independence which kept them in a state of rebellion, nevertheless tried to appear at least superficially aware of the civilization and art of Rome.

The Roman monuments in Africa, considered with respect to their architectural forms and to the style of their decoration, are not distinct in any significant way from the more common forms found in the provinces of the western part of the empire, and they most closely resemble the monuments of the Iberian peninsula. In contrast to the taste prevalent in the eastern provinces, in Asia Minor and in Syria, these monuments are not intended to astonish with their grandeur of scale or the abundance and refinement of their decoration. A sense of balance and sobriety, in spite of a rather rough appearance, is dominant in them, especially in those of the first two centuries of the Roman era. The materials at the disposal of the builders — sandstone and limestone — contribute not a little to this sober effect, for Africa contained only a small quantity of marble and imported the rest. The greater number of public buildings, even in the more important cities, were constructed of sandstone and limestone, both the walls and the architectonic memberings. Sandstone was usually covered with plaster, both to make it resistant to atmospheric conditions and to give it a more pleasing appearance. Private buildings, and even the public ones in minor centers, were still more cheaply constructed, with walls of little irregular stones contained within a framework of pilasters of cut stone or sometimes merely of packed earth. The Severan buildings at Leptis Magna are an exception. In these the actual introduction, rather than the mere influence, of the architecture and decoration peculiar to the East is clearly visible, perhaps as a result both of the wishes of the imperial patron and, even more significantly, of the important connections of that region of Africa with the eastern basin of the Mediterranean. These connections largely account for the work in Africa of the artists of Aphrodisias, in Asia Minor, which is probably not limited to Leptis but extends also to the two other great cities of that region, Oea and Sabrata, where perhaps it had already arrived before the 3d century — by the time, that is, of the Antonines (cf. the arch of Marcus Aurelius at Oea). On the other hand, relations with the Attic and Alexandrian sculpture workshops can be seen in the sculpture found at Leptis in the old forum as well as in the theater and baths. Thus, although in the remainder of Roman Africa we find fine works of marble and bronze sculpture only at Caesarea and Volubilis (where, at any rate, they must be considered with reference to the collection eagerly acquired by Juba II), Leptis is perhaps the only city that has yielded works not from modest local workshops but either imported or produced by some immigrant Eastern or Greek artist.

The truly great African art was that of the mosaic (PLS. 23-28). Numerous examples, dating from the 1st to the 5th centuries and into the Byzantine period, are found everywhere, from the large cities to the more modest centers, and in buildings scattered through the countryside. The majority come from private houses and villas, but some public buildings, such as baths and basilicas, were also decorated. Usually these mosaics decorated the pavements, which have best resisted the destruction of time; but sometimes they also appeared on the walls and ceilings, which were more often decorated with painting. Surviving evidences of wall mosaics are, however, scarce (Zliten, the sea baths of Leptis Magna, Sabrata in Tripolitania, Thysdrus in Tunisia). The subjects and decorative motifs of the mosaics are extraordinarily varied. Some are geometric, others are drawn from the world of vegetation, and still others are mythological or genre scenes or representations of familiar events (races in the circus, spectacles in the amphitheater, country life, religious ceremonies). The style and execution also are varied, but the derivation from Alexandrian and Asiatic models is always striking. The artists and artisans must have taken these models from albums and pattern books, almost always limiting themselves to varying the composition, assuredly without understanding it, and to exercising what skill they possessed in trying to obtain the best decorative effect.

The spread of Christianity into the region carried with it a new element of artistic inspiration, which did not, however, bring about the introduction of new forms of expression but made use of forms already in use. The only new type of building was the basilica, for which the models were taken above all from the western Roman world. The churches, which were very numerous in the cities but were also, from the 5th century on, scattered in great numbers through the countryside, have for the most part an elongated rectangular plan.

The façade, to the west, is in rare instances preceded by an atrium and more often only by a narthex. The interior is divided into aisles, and more frequently than elsewhere there are more than the usual three; for example, there are nine at *Damus el Karita* in Carthage, seven in the *Basilica Majorum* and in *St. Cyprian* at Carthage, seven in the great basilica on the western hill at Tipaza, and five at *Orléansville*. The aisle divisions are formed by piers or columns or by coupled piers and columns; the nave is covered by a wooden roof, the aisles vaulted. The apse is sometimes but not always flanked by two spaces known as the "prothesis" and the "diaconicum," which, following Eastern precedent, later become characteristic. Usually there is no transept. The altar is in the middle of the central nave, and the apse is elevated, sometimes over a half-sunken crypt. Next to the church is the baptistery, with a font usually circular or polygonal but sometimes cruciform. Buildings with a centralized plan, used either as baptisteries or as memorial chapels (*cellae trichorae*), are rare. Frequently there are great complexes consisting of several churches, generally constructed successively, or of churches, chapels, a monastery, and other buildings. Among the most noted are those of *Theveste*, *Cuicul*, *Carthage* (*Damus el Karita*), and *Thamugadi* (this last being of Donatist origin).

Repeatedly destroyed and rebuilt, the Christian buildings of the 4th and 5th centuries, with such exceptions as the great basilica of *Theveste*, give little evidence of structural unity. Many of them must have been assembled of salvaged materials; only certain elements, such as impost blocks and corbels, were built expressly with Christian figures and symbols, generally of a very simple character.

Nevertheless, their interior decoration must have been rather lively, for we know from documentary sources that on the walls there were pictures representing scenes from the Old and New Testaments. Of these, however, virtually none remain. Perhaps there were also mosaics on the walls, but only those on the pavement remain. In these are repeated old classic motifs, geometric and figural, the latter given a Christian meaning. In some Tunisian churches it was a fairly common practice to decorate the walls with plaques of terra-cotta tile which were either purely decorative or inspired by scenes from the Old and New Testaments. Other sculptured works were rare, such as two reliefs in the *Musée Lavigérie* at Carthage, which represent the Adoration of the Magi and another scene of less certain meaning, perhaps the Annunciation to the Shepherds.

Subterranean cemeteries similar to the Roman catacombs are rare in Africa, though they are found at *Hadrumentum*, *Sirte*, and *Sabrata*. More common were open areas containing tombs in simple or decorated chests or in chests covered by a rectangular tumulus of heaped stone or earth, plastered on the outside and sometimes also decorated on the top by a mosaic showing the dead person among floral and symbolic motifs (at *Thabraca*, *Thaenae*, etc.). Tombs of venerated personages were sometimes enclosed in *cellae trichorae*, which made up the nucleus of a cult center or which were constructed in the guise of a chapel near a church.

Sarcophagi, of which the most notable is without doubt that found at *Theveste* (now in the church of *Tébessa*), in which the central figure has been considered the personification of the Roman church, were not numerous.

Pietro ROMANELLI

The Vandals and the Byzantines. The disintegration of Roman power, the religious conflicts that troubled Christianity even though it had triumphed in Africa over the pagan religion, and dynastic struggles, leading to new conflicts, combined to put North Africa in such a state of anarchy that the Vandals readily conquered it after passing triumphantly across Gaul and Spain. For approximately a century, from 430 to 530, Barbary and, in particular, Proconsular Africa and *Bizacena* (present-day Tunisia), like northern Numidia (the region around *Constantine*), were to know Vandal domination. Nothing remains of this except for a few poorly dated tombs and some jewelry of uncertain provenance.

The reaction of the Romanized population to Vandal domination induced the Byzantine emperor Justinian to launch a powerful attack on Barbary under the command of *Belisarius*. The Vandals were conquered; Carthage was taken, and North Africa passed under Byzantine dominion. The Byzantine boundary lay somewhat outside the old Roman one, and the new occupants limited themselves to building some military fortifications on the far side of the line. The whole frontier was marked by redoubts, usually constructed on the ruins of Roman forts and fortified towns. The fortified Byzantine towns in Africa were surrounded by a triple series of protective battleworks, including an encircling wall that protected the outskirts of the city and a broad, deep moat surmounted by a parapet. The walls, which were made of two faces of cut stone filled in with various materials, were usually from 26 to 32 ft. high, and their average thickness varied from 6 to 8 ft.

Byzantine military architecture did not bring about great innovations in Africa. Though inspired by Eastern schemes, in general it by no means demonstrates the characteristics of Eastern cities, for the newcomers in Africa were confronted by certain immediate necessities. The builders worked hastily and sometimes even carelessly, employing Roman remains as much as possible without hesitating to mutilate or disfigure a triumphal arch or to demolish buildings to procure construction materials.

Nor did Byzantine art show very original characteristics in ecclesiastical architecture. The basilicas were reconstructed according to the plan of contemporary Eastern churches. In contrast, it was in the decoration of Christian monuments that the Byzantine period showed local traits clearly distinct from those of the Middle East; the inspiration came from indigenous temples and particularly from the geometric decoration previously mentioned. But the contacts are reciprocal, as we can see from some Kabyle caskets decorated with symbols that are clearly Christian.

Islam. In 670, *Okba* ('*Uqbah ibn-Nāfi'*) founded *Kairouan*, the first citadel to consecrate the Moslem victory in North Africa. This almost legendary accomplishment had been preceded for 25 years by a series of more or less victorious raids and was followed by difficulties that by no means ended with the great captain's triumphal march to the Atlantic in 681. The resistance did not come from the Byzantines, who were conquered rapidly enough, but from the Berbers. The closing years of the 7th century were characterized by Berber revolts. The early years of the 8th century saw the Moslem conquest definitively consolidated, but religious struggles shook the land throughout the century until the appearance of the first Moslem dynasty in North Africa, that of the *Aghlabids* of *Kairouan*. Almost simultaneously, a Moslem dynasty flourished in Morocco also, founded by *Idris*, an Arab refugee. In this way, during the 9th century the two extremities of the Maghrib were firmly secured in Moslem hands, while in the center, in Algeria, a new dynasty arose, that of the *Rustamids*, which had its capital at *Tihert*. A century of peace, which local conflicts and raids on the coasts of Sicily and Italy did not disturb, allowed the country to recover a certain amount of prosperity.

In the 10th century, new upheavals occurred at the hands of the *Fatimids*, one of the seven most powerful sects of Islam, who took over the throne of *Kairouan* and drove off the *Rustamids* of *Tihert*, disturbing the tripartite balance established in the 8th century. The *Idrisids*, conquered by local tribes, then retreated into the shadows and disappeared, leaving Morocco in total anarchy.

The *Fatimids*, however, dreamed of winning back their supremacy and of installing themselves in the East, the center from which Islam spread. Levying troops among those Berber tribes to which they owed their success, they arrived in Egypt in 970 and founded *Cairo*, yielding the throne of *Kairouan* to the *Zirids*, *Sanhaja* Berbers who had lived until then in the central Maghrib, where their capital, *Achir*, was located. These *Zirids* showed themselves competent rulers, both at *Kairouan* and in the central Maghrib, where the *Hammadids*, a collateral branch, were to found a dynasty and construct a capital at *Kalaa*.

The bulwarks and arsenal gate of *Mahdia* are to be credited to the *Fatimids* and even more to the *Zirids*. The *Hammadids* protected their city with thick bastions exemplified by some remains at *Kalaa* and a fine door at *Bougie*, the *Bab al-Bahr*.

In *Ifrikia* (now Tunisia) as well as in the central Maghrib traces can be found of bridges and aqueducts belonging to this period, especially at *Sabra-el-Mansūriyya*, *Mahdia*, *Kalaa*, and *Bougie*.

At *Kalaa* the minaret presents externally a motif of niches that either are semicylindrical or have a flat background, like those found also at *Manār*. It is clear that the inspiration for these decorative themes must have come from *Ifrikia*, where there are niches of the same type in the portico of the mosque of *Mahdia* and in the old *mihrab*. Often in the upper part these grooves open in the form of a shell or beehive.

Recent discoveries indicate that another decorative theme was in use at *Kalaa* at the end of the 11th century: *muqarnas*, or forms that project like stalactites. These seem to have been extremely popular later in the 12th century, both in the Maghrib and in Norman Sicily and Spain.

Wood, stone, and marble were skillfully used for columns, original capitals, modillions, and finely decorated architraves.

In the 10th, 11th, and 12th centuries the art of ceramics was also a thriving one. At *Kalaa*, as at *Kairouan* and elsewhere, many different techniques were employed in the working of glazes, from simple varnishes to those with metallic brilliance; at an intermediate stage were the polychrome ceramics, varnished and unvarnished. Flora and fauna themes, human representations, and Arabic script were used, in addition to geometric motifs. Decorative writing had, in fact, an important place in both painting and sculpture: the letters, which are highly stylized and almost indecipherable, are accom-

modated to the needs of the artist. They are elongated and twisted into volutes, rosettes, and tendrils.

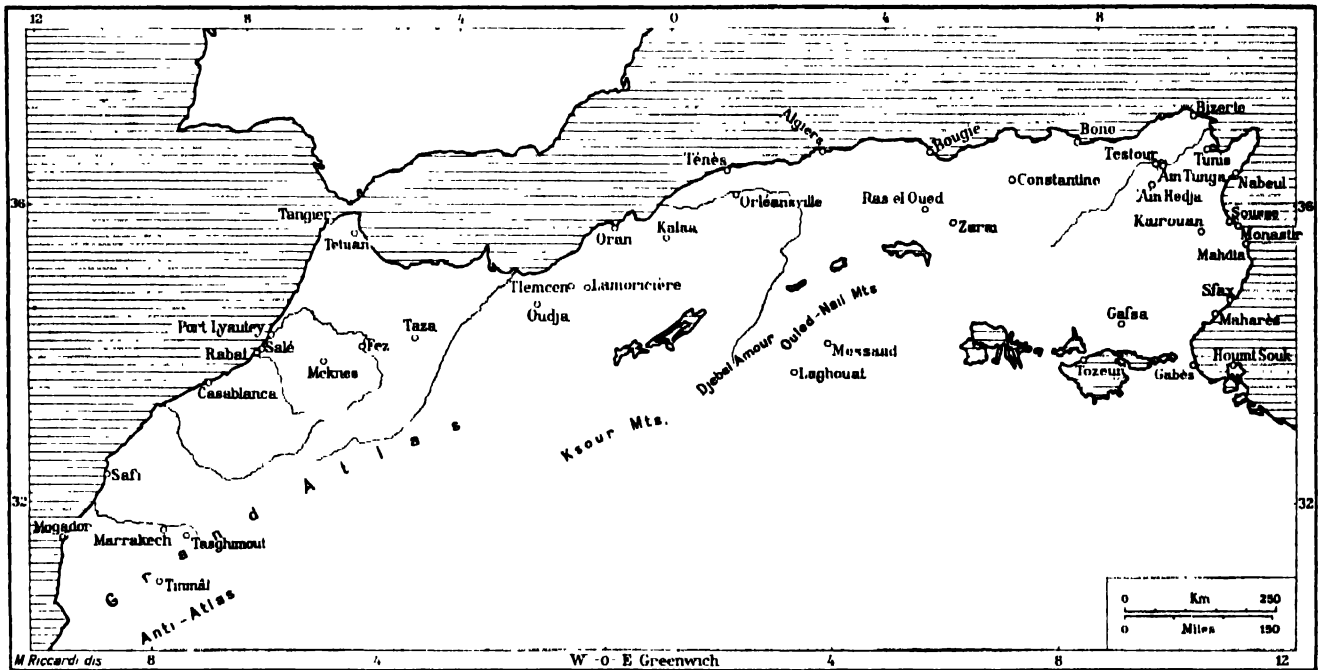
Meanwhile, the most notable event of North African history was taking place—the invasion of the Hilalian Arabs, nomadic bandits sent by the Fatimid Caliph of Egypt into the Maghrib to punish the Zirids, who had freed themselves from the control of Cairo. This invasion marks a definite and revolutionary turning point in the destinies of North Africa. Ifrikia and the greater part of the central Maghrib were devastated. But this eruption from the East entailed, in a surprising and unexpected fashion, a break with the East itself, and it was probably these same nomadic hordes who themselves brought the germ of anarchy.

Until this time all the civilizing influences had come from the East. The great Okba, in founding Kairouan and in constructing the first North African mosque, was inspired by Eastern art, and

and Sfax and for the construction of the mosques at Bône (Sidi Bu Marwân) and Ténès in Algeria.

The related and rival dynasty of Beni Hammâd built as their first capital Kalaa, which was celebrated for its palaces and mosques; their second one, Bougie, was still richer than the first.

As we have seen, the invasion of the Arab nomads marked a break between the East and the West. The Maghrib, convulsed by struggles until then, must have undergone changes at the hands of the new conquerors, the Almoravids, who had come from the depths of the Sahara and were distantly related to the Zirids, though of uncertain ethnic origin. They imposed their faith and laws on all western Barbary, conquered Spain, and penetrated as far as the central Maghrib. Thus, although they were an obscure, little-advanced Saharan group, the Almoravids helped promote one of the most important civilizations of the ancient world, that of Moslem



North Africa: the Maghrib, showing the principal Islamic centers.

his example was to be faithfully followed by his successors, particularly by the Aghlabids, who were the great builders of the 9th century.

The Aghlabids were responsible for the Great Mosque of Kairouan as it is seen today, constructed on the remains of the mosque of Okba of 670. They also restored the Great Mosque of Tunis, the foundation of which goes back to 732, and built that at Sousse in 850 and at Sfax in 849. The Aghlabids were also responsible for military fortifications and grandiose palaces such as that at Rakkada near Kairouan, and for works of notable public importance, such as cisterns, aqueducts, and bridges.

At the other end of North Africa, the Idrisids distinguished themselves through the construction of Fez, which they endowed with numerous mosques, the most important of which, built in 859, still exists.

In the central Maghrib the Rustamids had made an important city of Tihert, of which unfortunately there remain only a few vestiges. After the Fatimid invasion they built Sedrata, from the ruins of which we can obtain some idea of the destroyed Tihert.

In the 10th and 11th centuries, under the Fatimids and their successors, the Zirids, the Berbers continued to respond to Eastern influences; but this was more true of Tunisia and the central Maghrib than of Morocco itself.

Although the Fatimids did not prove to be great builders like their predecessors, they constructed Mahdia in Ifrikia and endowed it with a beautiful mosque. The fine palace that al-Manşur had constructed at Sabra-el-Manşûriyya should also be noted.

In addition to the palace and mosque at Achir, their capital in central Maghrib, the Zirids are responsible for the embellishment of the Great Mosque of Kairouan and of that of Tunis, the Zaytûna, as well as for the enlargements carried out in the mosques of Sousse

Spain. They built their capital at Marrakech and adorned it with a fine mosque of fired brick, but they also built other religious buildings at Fez, Tlemcen, and Algiers.

Their splendor was to be of brief duration, however, for in the first half of the 12th century they were supplanted by other Berbers, the Almohads, who came from the Grand Atlas and quickly took possession of the conquests of the Almoravids. They occupied Spain and put an end to the reign of the Hammadids, seizing Bougie and Kalaa. At the same time the Zirids had been driven from the coast of Ifrikia by the Sicilian Normans who, in their turn, had to yield before the power of the Almohads.

From this time on, inspiration came from the West, and the art of the Maghrib borrowed its themes essentially from the Hispano-Moorish repertory. This tendency lasted until the 17th century, that is, until the Turkish period.

During the 13th and 14th centuries, new dynasties broke up the Almohad empire. The Hafsids, of Almohad origin, ruled Tunis; Tlemcen was defeated by the 'Abd al-Wadids; and Fez came under the rule of the Merinids.

To these Merinids we owe the Great Mosque of Fez-Djedid (1267-1395), the mosque of Taza (1291), that of Oudjda (1296), and that of Al-Zhar at Fez (1357). The 'Abd al-Wadids, on the other hand, are responsible for the minaret of Agadir, the mosque of Sidi Bel Hassen, and that of Ulad al-imân at Tlemcen, which was also enriched with famous monuments by the Merinids, under whose rule it came briefly. The Mosque of Mansura, of which there still remains part of a fine minaret rising from the ruins, was also their work.

The Mosque of Al-Ubbad (Sidi bu Medina) in the vicinity of Tlemcen dates from 1339; it is distinguished by its monumental doorway and by the handsome stucco decoration of the sanctuary.

The mosques of Sidi al-Halwi (1353) and Sidi Brahīm (1358) at Tlemcen are also monuments of the 'Abd al-Wadids.

Monuments characteristic of the civic architecture of this period are the numerous madrasahs, or Moslem colleges. Notable are those at Fez (such as the Madrasah bu-Ināniyya), the Madrasah Hāshfiniyya at Tlemcen, constructed about 1337 and demolished during the 19th century, and finally that of Al-Ubbad, of 1347.

The Hafsiids constructed the Mosque of the Kasba at Tunis and that of Al-Hawā. In addition, in 1293 they completed some work on the Great Mosque of Kairouan, and they erected madrasahs such as that called "Muntāḡiriyya" (1434-37).

The military architecture of this period is represented by certain enclosing walls such as those of Fez-Djedid, Chella, Mansura, and Tlemcen, and that of Tamzezkert near Bougie. The gates Bab al-Jedid, Bab al-Namara, and Monastir at Tunis are the work of the Hafsiids.

While the Saadi sherifs in Morocco were taking control of Fez and driving the Merinids out, the rest of Barbary was passing under the dominion of the Ottoman empire as the result of a series of victorious raids by the Turkish corsairs commanded by the Barbarossa brothers. This new domination in central Barbary (Algeria) and eastern Barbary (Tunisia) was necessarily accompanied by a return to Eastern traditions, while Morocco, under the dynasties of the sherifs, first the Saadi and then the Alaouites, remained in the Hispano-Moorish cultural sphere.

The Saadi, who long held sway at Marrakech, built numerous mosques there, among which were those of Bāb Dukkāla (1557) and Al-Muassan (1562). But their fame as builders rested largely on the mausoleum erected by their princes and covered with an exuberant decoration that still retains a certain grandeur.

The Alaouites also distinguished themselves through the construction of religious edifices and a great number of madrasahs. In the field of civic architecture the two dynasties of sherifs built many palaces, of which there remain only those of Dār el Mahzen, Marrakech, and Fez-Djedid. Many urban dwellings up to the present day have been inspired by the architecture of these princely dwellings.

Even in their military architecture the sherifs sometimes employed decoration as a means of attenuating the severity of the line (e.g., the al-Manṣur gate at Meknes). But in general the architecture and the decoration lacked originality and did not undergo any innovating influence, as did the countries that came under Turkish dominion.

Finally, the new rulers erected many religious structures in Algeria, especially in Algiers, where the oldest mosque, that of Ali Bitchnin, now Notre-Dame des Victoires, dates from 1622.

The Mosque of the Pêcherie (1660) demonstrates the typical plan of Algerian mosques of the Turkish period. The building is covered by cupolas, the principal one being oval and supported on pendentives; the cruciform ground plan is unmistakably reminiscent of Byzantine art, although it was built at a time when this style seems to have been completely forgotten in North Africa.

Rather similar to this is the mosque of Sidi Mahrez, built at Tunis about 1675. Its cupolas tower above the sooks. The other Tunisian mosques of the Turkish period do not follow this plan, however. In Tunisia some unusual phenomena may be observed: the architects remain faithful to the column as a support for the arcade of the aisles, but the courtyard is displaced along one or both sides of the sanctuary. The minarets are clearly inspired by those of the East.

The Turks also constructed numerous madrasahs. Algiers adopted for its buildings the typical projection of the Turkish city; in the dwellings the upper floor protrudes and is supported by corbels made of wooden cylinders. Numerous palaces were also erected.

Turkish structures in Tunisia include the Dār el-Bey, the Dār Hussein, and the Bardo and Manūba palaces. In Tunis, which is endowed with magnificent sooks, rich dwellings were also constructed.

Although the various periods dealt with above give testimony of a certain evolution and sometimes of notable changes, Moslem art in North Africa gives an impression of unity which distinguishes it clearly from other types of artistic expression. It does not employ statuary and bas-relief; it never shows representations of living beings, which were also banished from religious buildings. This fixed rule has distracted artists from careful observation of the world around them and caused them to turn in upon themselves; consequently, their creations have a cerebral character and do not produce an emotional reaction. Their creative impulses follow the forms characteristic of the Moslem East, either directly or through the intermediate influence of Moslem Spain. This has made theirs a composite art combining Eastern and Western motifs; it is local influences that give it its unquestionably original characteristics.

Louis GOLVIN

This trend, however, has tended to become more and more absorbed into the broad stream of modern construction methods and contemporary taste. Among the most interesting results along these lines is the Municipal Administration Building in Algiers. The complete adoption of European forms is rare, however, and of comparatively minor significance, especially in religious architecture.

Problems of city planning and development are of perhaps greater interest. In French Morocco the Service des Plans des Villes was established to provide for the future growth of cities. Urban redevelopment has been effective in Tangier, Algiers, Tunis, Casablanca, Tripoli, Bengasi, and other cities.

The art and environment of these regions has exercised a perceptible influence on European painting and sculpture, particularly in France — for example, the art of Delacroix and Fromentin. The products of local craftsmen — carpets, leather goods, and jewelry — are of interest. And it is not surprising that the European influence on cultural institutions having to do with the fine arts has been particularly strong. The Ecoles des Beaux-Arts of Algiers and Tunis and particularly the various museums are important in this connection. Among the museums should be mentioned the Musée National des Beaux-Arts of Algiers, which possesses, among others, works of David, Delacroix, Fromentin, Rousseau, Rodin, Degas, Ingres, Pisarro, Daumier, Utrillo, Matisse, Derain, Bonnard, Gauguin, and Renoir; the Archaeological Museum (Musée Alaoui) and the Arab Museum in the Bardo Palace in Tunis; the Musée Lavigérie in Carthage; the Museum of Moroccan Art of Dar Batha at Fez; the Archaeological Museums of Tripoli, Leptis Magna, and Cirene. Small museums, arranged according to up-to-date methods, are to be found on many of the archaeological sites.

The new independent states of Arab North Africa, particularly Libya and Tunisia, tend to follow in the field of art the methods of organization established during the period of European domination.

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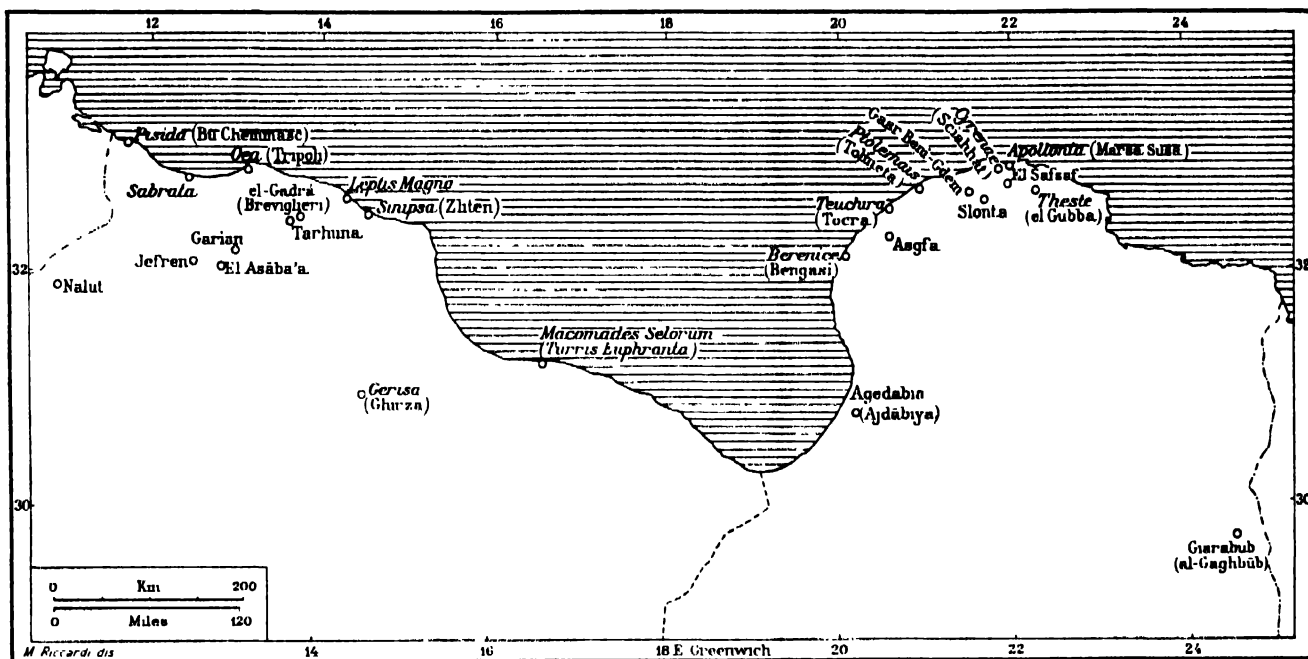
Some aspects of the period of European influence. Architecture during the period of European occupation and control of the various territories of North Africa reflects in part the force of local tradition.

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of *Bubalus antiquus*. Here are numerous wild animals as well as various domesticated ones, such as oxen. The human figures are probably of a later period.

In three places in the mountains of Ben Ghnema are rock carvings of various types and periods. The human figures formed of two tangential triangles, the elephants, rhinoceroses, and bison are prehistoric.

In eastern Fezzan, north of the Tibesti Mountains in the Jebel Neghei, or Eshei, a few carvings have been found which are perhaps prehistoric. In the Tibesti, where specimens of rock art abound, the best figures in the most archaic style are the elephants of Enneri Ganoa and Enneri Figgui, the giraffes of Aczun and Orori, and the ostrich of Enneri Fofodé. Paintings in a naturalistic style have been found in the regions of Ouri and Gomeur, in the eastern Tibesti Mountains, and in Enneri Aranaba in the Dohone.



Cirenaica and Tripolitania: principal centers of antiquity.

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LIBIA. Prehistoric centers. Among the few remains of petroglyphs that have been found in Tripolitania are the notable figures of bison with disks between their horns at Maua Dib.

It is evident in some of the specimens of rock carvings found in western Fezzan that the figures were engraved at different times. This is true of those in the Wadi Zigza, in which numerous figures of animals appear; of the bison in the Wadi Umm Gher; and of the scene of the elephant hunt in the Wadi Masaouda. Other carvings are to be found along the course of the Wadi el-Agial, a zone which, moreover, seems to have been thickly settled in both prehistoric and historical times.

The most important site is in the region of the Wadi Bergiug, where some of the petroglyphs are related to more ancient specimens found in southern Oran, as evidenced by the presence of the figure

The El-Auenat massif in southeastern Cirenaica is one of the most important centers of rock art in the Sahara. Paintings and petroglyphs have been found at Kakur et-Taleh, in the eastern part of the massif, formerly in Egyptian territory; at Ain Doua, the rock art of which is considered to be among the best prehistoric productions; and at Ierguehda (Yerhauda), south of El-Auenat. The paintings of the Gifl el-Kebir, in Egyptian territory along the boundary of Libya, belong to the same type as those of El-Auenat.

Historical centers. a. Cirenaica. Agedabia (Ajdābiya, perhaps anc. Corniculatum). On the border between Sirtica (Tripolitania) and Cirenaica, south of Bengasi. About the middle of the 1st century it was the seat of a Roman garrison. There are ruins of an aqueduct and cisterns in working order cut in the rock. Nearby are the remains of a Roman fort on the Roman limes of Cirenaica.

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Apollonia (Gr., Ἀπολλωνία, Σόζουσα; Lat., Apollonia; Byzantine, Sozusa; modern Marsa Susa). In Cirenaica, on the Libyan coast about 12 miles northeast of Cyrene. Known as the port of Cyrene (Pseudo-Scylax, 108), it took its name from the divine protector of Cyrene only in the 4th century B.C. It was one of the cities of the Pentapolis (Strabo, XVII, 3, 20; Pliny, *Naturalis Historia*, V, 5, 31) and was of great importance in the last days of the Roman empire and in the Byzantine era, when it was called Sozusa and was the see of a bishop. It declined following the Arab invasion.

The inhabited area was enclosed by a rectangular wall terminating on the west with a round tower. The remains of a second tower are in the sea. Inside the walls there are, in addition to houses, four Byzantine basilicas, the most important of which dates from the 4th and 5th centuries and was built over a Hellenistic structure. East of the basilica are fourteen rooms near a square court and behind

them are three communicating cisterns, two vaulted and one roofed. Outside the walls are a theater, with an auditorium partially raised on vaulted passageways, built against the walls; a Roman aqueduct; numerous underground rooms similar to those in Cyrene; and Christian basilicas.

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Bengasi (also Ben-Ghazi; Gr., Εὐεσπερίδης, Βερενίκη; Lat., Euesperidae, Berenice). On the coast, east of the Gulf of Sidra. It was the Greek colony Euesperides, whose legendary origins go back to the beginning of the 5th century B.C. It received a colony of Cyrenians during the reign of Arkesilas IV of Cyrene, who, driven from his own city, took refuge in Euesperides and died there about 450 B.C. It suffered many incursions and sieges at the hands of the Libyans, notably that of 413, from which it was liberated by the efforts of the Spartan Gylippus. It was one of the five cities of the Cyrenaican Pentapolis, often at war with one another although all were under the hegemony of Cyrene; and together with the rest of the region it finally fell under the more or less direct dominion of the Ptolemies of Egypt, assuming the name of Berenice from that of the wife of Ptolemy Euergetes. When it passed to Rome with the rest of Cyrenaica, it was first a free city and then was incorporated into the province constituted in 75-74 B.C. Justinian restored the walls and the public buildings and established baths. Devastated, probably first by the Vandals and then by the Persians of Chosroes in 616, it declined slowly until the Arab conquest about the middle of the 7th century, though it still maintained a certain importance.

About a mile and a half from the modern city, between the sea and the Sebkhia Selmani (the ancient Palude Tritonia), there are traces, revealed by aerial photographs, of the regular outline of the ancient city, of which few remains are visible on the surface. Potsherds from the 4th and 5th centuries B.C. have been found.

Strabo mentions a temple of Aphrodite on an islet in the lagoon, and two inscriptions reveal that there was once an amphitheater. A portrait bust of Tiberius was found in the foundations of the new town, and near the lagoon were found a Hellenistic polychrome relief, in the form of a shrine with figures from the myth of the Argonauts, and the remains of an inscription.

Today Bengasi is a flourishing modern city and the chief center of Cirenaica. The native quarters, such as those of El-Hascia and Tchercam, with their mosques and gardens, are readily distinguished from the Italian quarter with its new buildings and Archaeological Museum. The oldest mosque is the Giama el-Chebir, founded about four centuries ago and now largely restored. El-Berca, a section that is somewhat removed from the main part of the city, contains a Turkish barracks; the breakwater of the small harbor is also Turkish.

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Cyrene (anc., Cyrene, Cyrenae; Gr., Κυρήνη, Κυράνα; Sciahhat). On the edge of the plateau, a short distance from the sea. A Greek colony of the island of Thera, founded in the second half of the 7th century B.C., it was an independent kingdom under the dynasty of the Battiadae and constantly at war with the Libyans and the Egyptians under the suzerainty of the king of Persia. As a republic from about the middle of the 5th century, it was governed by the aristocratic party, always in conflict with the democratic. It had frequent periods of tyranny by and bitter struggle with the Carthaginians, especially in the 4th century. In 331 it became subject to Alexander, and subsequently it was again a prey to factions, with occasional interventions by the Ptolemies of Egypt. Along with the other cities of the Pentapolis, it was given a constitution that placed it under the domination of the Ptolemies; at the same time (ca. 250) Cyrenaica was united to the crown of Egypt. Willed by Ptolemy VII to his son Ptolemy Apion, it passed to Rome upon his death in 96 B.C. At first a free city, it was incorporated in the new province of Crete and Cyrene in 75-74 B.C., though it was allowed to maintain its own communal institutions, which were Greek in character. It may have been raised to the rank of colony later. Christianity was established in it very early, and as an episcopal see Cyrene was the scene of frequent conflicts between different currents of religious thought. Between the end of the 4th century and the beginning of the 5th it was devastated by earthquakes. Although it passed to the Byzantine empire, it was in fact dominated by indigenous Berber tribes. It was sacked by the Persians of Chosroes in 616 and finally conquered by the Arabs about 647.

The ancient city covered two hills with the principal street in the valley between them. It was surrounded by walls, of which there are numerous traces, and there was a fortified upper section. The commercial and civic center was on one large terrace, and on a lower one were the religious center, the baths, and the theater. The principal group of monuments is on the terrace of the Temple of Apollo and includes pre-Roman propylaea and a temple with four columns on a stepped base, from which a wide esplanade, bounded on the south by a long wall of inscribed square blocks (4th cent. B.C.), leads to the fountain of Apollo. There is a kind of cliff sanctuary on the top of the wall.

The Temple of Apollo, erected at the end of the 7th century B.C., the oldest and most important of the city, is in the center of a sacred enclosure crowded with chapels, altars, and minor temples. It is a Doric peripteral temple with six columns on each end and eleven along the sides, with a cella and an inner sanctum, divided into three aisles. Many times restored and rebuilt (5th and 4th centuries B.C. and under Trajan), it began to be used as a Christian church after an earthquake in the 4th century. The baths were constructed by Trajan (A.D. 98), rebuilt and enlarged by Hadrian (A.D. 119), and again remodeled in a reduced form in the late antique period (small baths); the 2d-century section has a large central room used as a frigidarium. The so-called "Strategion" is a Doric edifice of large square blocks in which is conserved the stele with the quotation from the testament of Ptolemy regarding the donation of Cyrenaica to Rome.

Other monuments were the Plutonium, composed of the small temples of Persephone and of Pluto; the theater, excavated in the hillside west of the precinct sacred to Apollo; the acropolis, the walls of which were restored under Augustus; and the monumental gate over the street to the agora. At the foot of the hill is a temple of Isis dating from the 4th century.

The quarter of the agora, a large, well-paved open space preceded by a monumental gate and surrounded on three sides by porticos, has been greatly modified during the centuries. In it are great altars, remains of votive monuments, and two round constructions, one of which was perhaps the *heroon* over the tomb of Battus, founder of the city. Overlooking the great square and adjacent to it are the capitol, prostyle with four columns; public buildings, one of which is known as the "Nomophylakeion" (chamber of the legislators); the unroofed Temple of Demeter; the Portico of Augustus; and two small temples with four columns on the façades. The Caesareum, on the street leading southeast from the agora, is a grandiose rectangular construction around a vast portico, with a small Temple of Dionysus and a basilican hall with a lateral apse. In the eastern section near the line of the walls is a row of large cisterns within a vast rectangular enclosure, a Byzantine Christian basilica, a stadium cut into the rock outside the walls, and a large temple of the Olympian Zeus on the top of the eastern hill. There are cemeteries all around the city, on the hillsides or bordering the roads (especially that to Apollonia), which were used from the 6th century B.C. until about A.D. 400. Carved in the rock are tombs resembling temples, chamber tombs with niches over the entrance and on the external walls for portrait busts, circular tombs, isolated conical tombs, and tombs surmounted by great sarcophagi placed one over another in tiers.

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El Gubba (ancient name may have been Theste). East of Cyrene. It was an inhabited center during the Greek colonization and later during the Roman empire, and it probably is the place where in 570 B.C. the people of Cyrene defeated the Libyan insurgents, aided by an Egyptian army.

A monumental fountain, probably of the Roman period, formed by a portico with eight rectangular pilasters partly engaged in the rock of the hill, serves as an ornament and as a covering for the mouth of a spring. There is a small modern fort built of large stones, drums of columns, and capitals from ancient structures. Near the village is a chamber tomb dug into the rock and decorated with Christian motifs.

BIBLIOG. P. Romanelli, *La Cirenaica romana*, Rome, 1943, pp. 202, 243, 250.

El-Safsaf. Jebel southeast of Cyrene. A center of indigenous and Roman life. The archaeological remains consist of stones, placed

close together in alignment, such as occur frequently on the Cirenaican Jebel (Beda, Messa, etc.), probably the remains of the encircling walls, constructed of rubble which has since disappeared. There is also a large cistern from the Roman period.

BIBLIOG. P. Romanelli, *La Cirenaica romana*, Rome, 1943, p. 258 ff.

Gasr Beni-Gdem. On a slight elevation along the road between Barca and Cirene, Gasr Beni-Gdem was a strategic and fortified position of the Roman limes of Cyrenaica. One of the best-preserved castles of all Cirenaica, it is from the Roman era, but perhaps Hellenistic in origin, with traces of Byzantine rebuilding. It is a rectangular construction of large blocks of limestone, with projecting towers, surrounded by fortifications with rampart and outworks. At the foot of the castle are the remains of an ancient village.

BIBLIOG. P. Romanelli, *La Cirenaica romana*, Rome, 1943, p. 200 ff.; R. G. Goodchild, *The Roman and Byzantine Limes in Cyrenaica*, JRS, XLIII, 1953, p. 65 ff.

Giarabub. Oasis in Marmarica, about 125 miles south of the coast, near the Egyptian border. It was already inhabited in antiquity, perhaps as a dependency of the oasis of Siwa. In several places in the environs, tombs cut in the rock walls of the high plateau have been found, containing mummies analogous to those of Egypt.

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Hagfet et-Tera. Jebel south of Bengasi. A grotto opening half-way up the rocky escarpment with notable remains of Mousterian and especially Upper Paleolithic stone objects of diverse cultures. There are numerous remains of hearths and of fauna.

BIBLIOG. AfrIt, VII, 1940, p. 7 ff.

Slonta. Jebel south-southwest of Cirene. It was probably an ancient Libyan and later Roman site on the road leading toward the depression of Schiariz. Along this road, some traces of which have been preserved, are remains of fortifications. In the "Grotto of the Figures" human figures aligned on different levels are carved in the rock. They are attributed to prehistoric peoples but may be of more recent date.

BIBLIOG. P. Romanelli, *La Cirenaica romana*, Rome, 1943, p. 201.

Tocra (Gr., Τούχειρα, Ταύχειρα, Ἀρσινόη; Lat., Teuchira, Arsinoë). On the coast between Bengasi and Tolmeta. Among the most ancient of the Greek colonies of Cyrenaica (possibly 6th cent.), it belonged to the federation of the Cyrenaican Pentapolis. In the second half of the 5th century it was part of the territory of Barca. It was besieged and taken by Tibron during his expedition against Cyrene (322 B.C.). When it fell under the dominion of the Ptolemies of Egypt, it was named Arsinoë for the daughter of Ptolemy II. It passed to Rome with the rest of the region (96 B.C.) first as a free city and then as a part of the province of Crete and Cyrene (75 B.C.). It may have been repopulated with colonists by Hadrian after the Jewish insurrection of A.D. 116, for it later received the honorific title of colony. It was the see of a bishop from the earliest Christian times, but until the end of the 4th century it was nonetheless a famous center of the cult of Cybele. It was fortified by Justinian against the frequent incursions of the Berbers, and fell to the Arabs toward the middle of the 7th century.

The imposing walls of the city enclose a square each side of which is almost 656 yd. long. They are made of regular rows of large parallelepiped blocks of limestone, with some 30 towers, jutting bastions, and several gates, and were built in the Justinian era over a previous construction from materials of older buildings. Inside the city, the layout of the streets is still in large part recognizable. Notable are the ruins of a terraced public edifice and of two Christian churches, perhaps of the Byzantine era. There are few remains of the port. From an inscription it is known that a temple of Liber Pater once existed. The high ground at the northeast angle of the city (Gasr Tocra) was probably the site of the ancient acropolis. East and west of the inhabited area are great caves, formerly quarries and later used as cemeteries with chamber tombs cut in the rock walls, sometimes in groups, with inscriptions in Greek, almost all of which are from the period of the Roman empire. Architectural remains and Greek inscriptions survive in the modern village.

BIBLIOG. P. Romanelli, *La Cirenaica romana*, Rome, 1943, pp. 28 ff., 173 ff., 182, 193, 203 ff., 222 ff., 237, 242.

Tolmeta (ancient name, Ptolemais; Gr., Πτολεμαίς). On the coast northeast of Bengasi. Founded in antiquity as the port of Barca, it achieved prosperity especially after the death of Alexander

the Great (322 B.C.) and the establishment of the Hellenistic monarchies. One of the cities of the Pentapolis, it fell with the rest of the region under the more or less direct dominion of the Ptolemies of Egypt and may have been named for Ptolemy II in the first half of the 3d century B.C., becoming independent of Barca. It passed to Rome as a free city (96 B.C.), was later incorporated in the province of Cyrene (75 B.C.), and rapidly became the largest and most flourishing city of the region, remaining so until the 4th or 5th century. Temporary residence of the governor of the province of Libya Superior, or the Pentapolis, under Diocletian, it very early became Christian and the see of the metropolitan and was famous for the heretical doctrines of its bishops, the most noted of whom was Synesius (5th cent.). Devastated by the Vandals in 428, it was fortified by Justinian and became the site of a strong military fortress. It fell into final ruin following the incursions of the Persians under Chosroes in 616 and the Arab conquest during the 7th century.

Among the notable monumental remains are the amphitheater dug out of a quarry and in part raised above it; the forum, with a great open space surrounded by porticos; an Ionic temple; a flight of steps at the end of an important street from the sea; a vast system of cisterns under the square; the street of monuments, preceded by an arch with three portals, with porticos, monumental inscriptions, and statues; a Christian basilica with a high central apse and two lateral ones; other basilicas; a Byzantine castle quadrangular in plan; and the western gate, between two sections of the wall built at a later time, defended by two square towers. There is also the so-called mausoleum, a large Hellenistic tomb of quadrilateral design placed on a base of natural rock made artificially regular; the bridge with the passageway of the aqueduct repaired by Justinian; the quarries in which were carved chamber tombs, rather late in style, with Greek inscriptions over the doors; the theater; the colonnaded palace of the Hellenistic age with modifications and additions from Roman times. There are notable sculptures, among which are seven bas-reliefs of maenads.

BIBLIOG. E. Ghialanzoni, *Notiziario Archeologico del Ministero delle Colonie*, I, 1915, p. 114 ff.; P. Romanelli, *La Cirenaica romana*, Rome, 1943, passim; G. Caputo, *Lo scultore del grande bassorilievo con la danza delle Menadi*, Rome, 1948; G. Pesce, *Il palazzo delle colonie in Tolemaide di Cirene*, Rome, 1950; G. Caputo, *Q. di Archeol. della Libia*, III, 1954, pp. 33-66.

b. *Tripolitania and Fazzan*. Breviglieri. Tripolitania, east of Tarrhona. On an elevation 5 miles east of the modern village are the ruins of an ancient rural settlement or perhaps of a monastic center. There have come to light the ruins of a Christian basilica of the 5th century but with notable additions from the Byzantine era. It is rectangular in plan, with a nave and two aisles, only two entrances, both lateral, and an elevated central apse and two flanking apsidioles; there are no traces of a portico or vestibule. In one of the connecting rooms there is a baptistery of the Byzantine type. About 15 miles from the church are the remains of a Roman-Byzantine fort, and at a short distance west of the modern village was a sanctuary of Jupiter Ammon (Ras el-Haddagia), known to us through a neo-Punic inscription from the time of Tiberius, which was partially occupied in Christian times by a country villa.

BIBLIOG. R. G. Goodchild, *Roman Sites on the Tarrhona Plateau of Tripolitania*, BSR, XIX, 1951, pp. 51-6; J. B. Ward Perkins and R. G. Goodchild, *The Christian Antiquities of Tripolitania*, *Archaeol.*, XCV, 1953, pp. 44-7.

Bu Chemmass (ancient Pisida, Pisidon). On the coast of Tripolitania west of Sabrata, near the peninsula of Ras-el-Machbez. A small Roman port mentioned by Ptolemy (*Geography of Greece Minor*, I, p. 464).

It was a municipality. Among the monuments are baths with traces of mosaic pavements and pictures and Punic-Roman subterranean chamber tombs marked above ground by a conical pillar on three rough steps.

BIBLIOG. S. Aurigemma, *Notizie archeologiche sulla Tripolitania*, Rome, 1914.

El-Asāba'a. Tripolitania, Jebel Garian south of Tripoli. A fertile territory, inhabited from Roman and Byzantine times. About a mile west are remains of a Christian basilica probably erected in the first half of the 5th century, in part from materials salvaged from earlier structures. It was rebuilt during the Byzantine reconquest of the region (6th cent.). It has a nave and two aisles, an apse used as a sepulcher, a long narthex, and an altar with a ciborium at the center of the nave. The baptistery is built against the external wall of the apse.

BIBLIOG. R. Bartocchini, *AfrIt*, II, 1929, pp. 77-92; J. B. Ward Perkins and R. G. Goodchild, *The Christian Antiquities of Tripolitania*, *Archaeol.*, XCV, 1953, pp. 35-7 (plan, fig. 17).

Gadames (Latin, Cydamas or Cydamus; Greek, Κιδαμῆ; Arabic, Ghadames). Tripolitania, 418 miles southwest of Tripoli, near the point at which the borders of Libya, Tunisia, and southern Algeria converge. It was a prehistoric site (Neolithic). The city, probably founded by the Garamantes, was a very important center of supply for the caravans traveling from the desert to ports along the coast (see Sabrata). In 20 B.C. it was occupied by the consul L. Cornelius Balbus Minor (Pliny, *Naturalis Historia*, V, 5, 33-8). During the reign of Alexander Severus (A.D. 222-35) it had a military fortress (CIL, VIII, 1, 3, 6). It was finally conquered by the Arabs some twenty years after Tripoli, about 665.

Southwest of the city, on the "Plain of the Idols," are six large irregular piers irregularly placed, which belong to a necropolis of the Roman period. Also among the remains are Byzantine columns and capitals that probably ornamented a Christian church; a bas-relief showing Egyptian influence; a stone seat that may have been a bishop's throne, now in the oldest mosque of Gadames; and numerous inscriptions.

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Germa (Garama). Fezzan, south-southwest of the oasis of Sebkhah; chief city of the Garamantes. The prehistoric date of the site is attested by many discoveries in the area (Paleolithic and Bronze Age). Remains of Roman structures, some of which have been incorporated in the modern buildings, have been found. The so-called "mausoleum of Cecilia Plautilla," (probably that of a Roman merchant), constructed in the 1st century, is built of square blocks of sandstone and has no internal crypt or cella.

In the environs, a system of long parapets of a defensive nature, fortification walls, remains of houses and reservoirs, and ruins (probably of a castle) have come to light.

About 44 miles from the mausoleum there is in the valley of the Wadi el-Agial an indigenous funeral chapel of the 2d century in the center of a vast cemetery, over 60 miles in length, containing more than 45,000 tombs located along the edges of the rocky escarpment. These are in the form of pits, trenches, and chambers, some with flat roofs, some with false vaults, and some with cupolas. There are some examples of burial on the side with the knees drawn up to the chin. Above ground there are steles crowned with palmettes, and upright stones with tables and basins for libations. A great quantity of funerary furnishings has been found dating from the 1st century on but mostly from the 3d and 4th centuries, especially Roman ceramics and glass.

BIBLIOG. A. Merighi, La Tripolitania antica, Verbania, 1940, I, p. 152 ff. and passim, II, pp. 16, 32, 145 ff., and passim; B. Pace, S. Sergi, and G. Caputo, Scavi sahariani, MemLinc, XLI, 1951.

Ghirza (Lat., Gerisa; Gr., Γέρισα). Tripolitania, in the region of the Orfella, about 100 miles to the southeast of Beni Ulid, almost at the confluence of the Wadi Zemzem and the Wadi Ghirza. A Roman center, probably important during the late imperial era and in Byzantine times. Of the inhabited area on the left bank of the Wadi Ghirza remain only the ruins of city walls. Along the wadi are two cemeteries from the 4th century. That on the left bank contains seven mausoleums, the most important of which, a peripteral temple with 12 columns, was erected by Nasif and Nascich to their mother Nimir; the other six are in the form of shrines with quadrangular bases and colonnades supporting architraves or arches with entablature. The other cemetery, on the right bank about 2½ miles from the first, is composed of seven tombs, the largest of which, about 46 ft. high, is in the form of an obelisk of quadrangular plan with two stories decorated with engaged pilasters and columns and is surmounted by a pyramid ending in a capital. The friezes on the various monuments depict such subjects as life in the fields and the hunt. In the environs there are numerous ruins of other similar mausoleums.

BIBLIOG. H. Saladin, Les monuments de Ghirza, Tripolitaine, Et. de l'Association Historique de l'Afrique du Nord, V, 1906, pp. 83-91; G. Bauer, Le due necropoli di Ghirza, AfrIt, VI, 1935, pp. 61-78; A. Merighi, La Tripolitania antica, Verbania, 1940, II, pp. 163-81, 204 ff., 210; J. B. Ward Perkins and J. M. Reynolds, The Inscriptions of Roman Tripolitania, Rome, London, n. d. [1952], nos. 898-903.

Jebel of Tripolitania. There are remains of various Romanized Libyan centers and markers along the limes of Tripolitania: Garian, a village around a Turkish castle, was built on the foundation of a Roman camp. On a height to the south-southwest, just outside the village, are Roman remains, and in the environs are the ruins of a rebuilt Roman mausoleum (Ghar Tegrinna). A milepost of Caracalla (ca. 216?) has been found at Caf Tobbi along the Tripoli-Mizda road, where other such mileposts have been found. At Jefren

there are Roman remains including a mausoleum in the form of a square tower (Soffit); at Nalut, the ancient Tabunati, a fortress of the limes on the way to Gadames. Tadhona was an important region in antiquity because of the great olive groves; remains of numerous Roman olive presses have been found northwest of the village and in particular along the road to Homs. There are also ruins of rustic villas and farmhouses; the cellar of a Christian structure of the 4th century; and remains of a castle, possibly Roman. Two and a half miles north-northwest (Scersciara) are the remains of a Roman villa with a portico and mosaic pavement, traces of basins, and a kiln for ceramics. About 5½ miles north-northwest (Ghar Doga), near the remains of an ancient inhabited center, are the ruins of a Roman mausoleum of the 2d or 3d century. It has a rectangular base with superposed tiers, a high podium, and a crowning colonnade. There are also subterranean burial rooms entered from above.

BIBLIOG. A. Merighi, La Tripolitania antica, Verbania, 1940, I, II, passim; S. Aurigemma, Il Mausoleo di Ghar Doga in territorio di Tadhona, Q. di Archeol. della Libia, III, 1954, pp. 13-31.

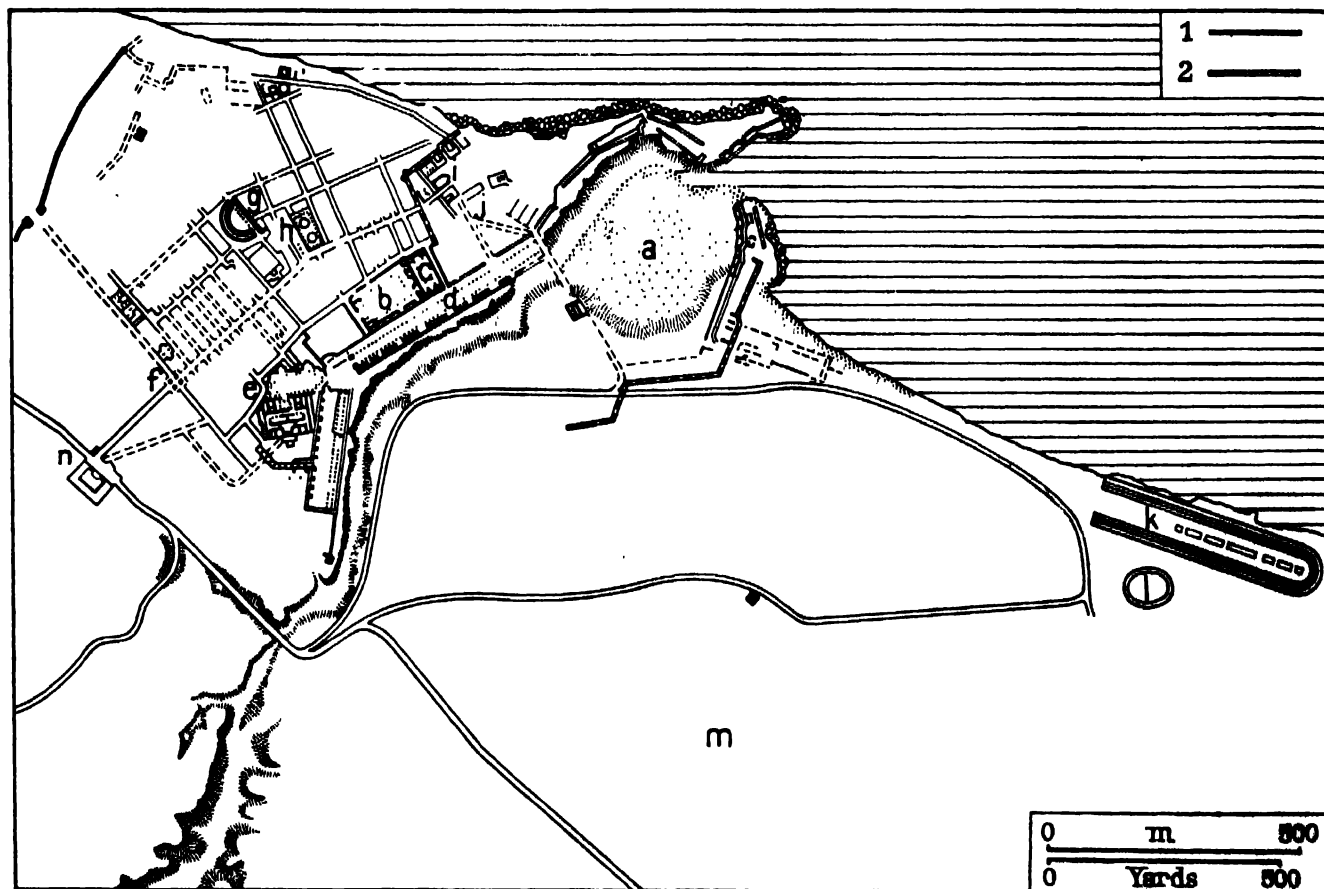
Leptis Magna (Punic, Lbqy or Lipqy; Lat., Leptis or Leptis Magna; Gr., Λέπτις); Lebda, near Homs. On the coast of Tripolitania between the Gulf of Sidra and the Gulf of Gabès, 62 miles east of Tripoli, along the Wadi Lebda. Founded by the Phoenicians in the 1st millennium B.C., Leptis formed, during the period of Carthaginian domination, with Oea, Sabrata, and other minor cities, the region of the Emporia, of which it was the administrative center. Between the Second and Third Punic Wars, although it retained considerable autonomy, it came under the domination of the Numidian king Masinissa. In 46 B.C. it was annexed to the Roman province of Africa. In A.D. 70 it was pillaged by the Garamantes allied with Oea in the war between the two cities. It became a colony under Trajan (A.D. 110) and reached its maximum prosperity during the reign of the Severan dynasty, whose founder, Septimius Severus, was a native of Leptis (late 2d and early 3d centuries). Its decline began with the invasion of the Austurians (363-76) and accelerated during the period of Vandal rule (5th century). It flourished again after the Byzantine reconquest (6th century) but was completely destroyed on the arrival of the Arabs (643-44).

The most important quarter of Leptis is on the left bank of the river. The streets and edifices are sometimes irregular in plan because various structures have been built one upon the other. The city has three circles of walls: the oldest, from the 1st century, was also the largest; the second, from the beginning of the 4th century, was of stone and enclosed the entire city except for the circus and the amphitheater; and the third, from the time of Justinian, is formed by double walls and encloses only the center of the city, exclusive of the theater and the market. The Arch of Septimius Severus, datable between 203 and 200, is situated in the southern part of Leptis at the crossing of two streets. It is a four-sided arch with niches and is ornamented with historical reliefs. There are large baths in the same area not far from the left bank of the river. They were built in A.D. 113-27 and renewed under Commodus. East of the palaestra there is an irregular square from Severan times with a nymphaeum on the side toward the river. South of the fountain is an arch at the beginning of a street lined with 250 columns and leading all the way to the port. The new Severan forum northwest of the colonnaded way is trapezoidal and surrounded on three sides by a portico; on the fourth side there was an octastyle peripteral temple on a high podium, perhaps dedicated to the gens Septimia. On the short side, opposite the temple, is a basilica with a nave and two aisles, and on the northeast side a street with 27 columns of marble from Carystus closed by arches. To the northwest the principal east-west street is crossed by several north-south streets with two triumphal arches, one dedicated to Tiberius in A.D. 37 by the proconsul C. Rubellius Blandus and the other, with four faces, dedicated to Trajan in A.D. 110-11 by the proconsuls Q. Pomponius Rufus and C. Cornelius Rarus. The theater on the left of the east-west street is from the time of Augustus and was embellished at various times. On the highest tier is a hexastyle temple (A.D. 35-36). On the left side of the east-west street are a market and numerous honorary monuments, one of which was dedicated in 9-8 B.C. by Hannibal Rufus. The old forum northeast of the Severan forum, near the port, is slightly irregular but almost square. To the southwest is a Christian basilica with an apse, constructed from a pagan temple with marble columns. On the west is a large temple with eight columns dedicated to Liber Pater, a temple to Roma and Augustus with eight columns, and a smaller temple. On the northeast is a basilica, rebuilt under Constantine, consisting of a large rectangular room with a portico on three sides, and other minor rooms; also on the northeast is a curia, a hexastyle temple enclosed by a broad colonnade. On the southeast is a three-sided portico with columns of black granite and, next to the Christian basilica, the ruins of a small temple of the Magna Mater Cybele. In the center of the square is a baptistery and farther south an exedra

consecrated to the Severans. The port, which was begun in the time of Nero and finally finished in the Severan period, has a very irregular basin with the entrance toward the east, made possible by excavating the sides of the left bank of the river and constructing to the north an artificial breakwater (425 yd. wide and 490 yd. deep, with 1,300 yd. of quay). At the end is a lighthouse; to the northeast is a large quay with a Doric temple in *antis*, towers, and Severan storehouses; to the southeast is a temple of Jupiter Dolichenus; to the west a Neronian portico; to the north, storehouses. There are baths outside the city, with interesting pictorial representations of wild-animal hunts, datable from the second half of the 2d century and several times modified. The circus stands to the east of the port near the shore. Its race-

1953, pp. 42-73; J. B. Ward Perkins and R. G. Goodchild, *Christian Antiquities of Tripolitania*, Archaeol., XCV, 1953; R. Bartoccini, *Relazione della I Campagna di scavo della missione archeologica italiana in Libia*, Q. di Archeol. della Libia, III, 1954, pp. 67-89; D. E. L. Haynes, *The Antiquities of Tripolitania*, London, n.d., pp. 71-99.

Sabrata (Neo-Punic, Sbrtn or Sbrt'n; Lat., Sabrata or Sabratha; Gr., Ἀβρότρονον, then Σαβράτα). On the coast of Libia, about 42 miles west of Tripoli. It was founded by the Phoenicians in the 1st millennium B.C. Passing under the Romans with the formation of the province of Africa in 46 A.C., it became a colony in the 2d century and reached its maximum prosperity during the reign of the Antonines and the Severans. Sacked by the Austurians in the 4th century, it



Leptis Magna. Key: (1) Roman walls; (2) Byzantine walls. Sections and monuments: (a) port, or cothon; (b) Severan Forum; (c) Basilica; (d) colonnaded street; (e) Baths; (f) Arch of Septimius Severus; (g) Theater; (h) Market; (i) Old Forum; (j) Christian basilica; (k) Circus; (l) Amphitheater; (m) cemeteries; (n) Museum.

course was defined by five basins of water in the center and two semicircular turning-point structures. There is an elliptical amphitheater south of the circus. Nearby are numerous villas, among which are the Villa of Orpheus and the Villa of the Nile, which has mosaics of the Alexandrian type. To the south, along the left bank of the wadi, are the ruins of an aqueduct and of two large cisterns. There are cemeteries on the left bank of the stream, far to the south of Leptis. Notable are the mausoleums of Gasr Shaddad and of Gasr er-Riiahi. There is a modern museum.

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flourished again in the Byzantine era (6th century) and fell to the Arabs in 643-44. It survived as a village until 1000.

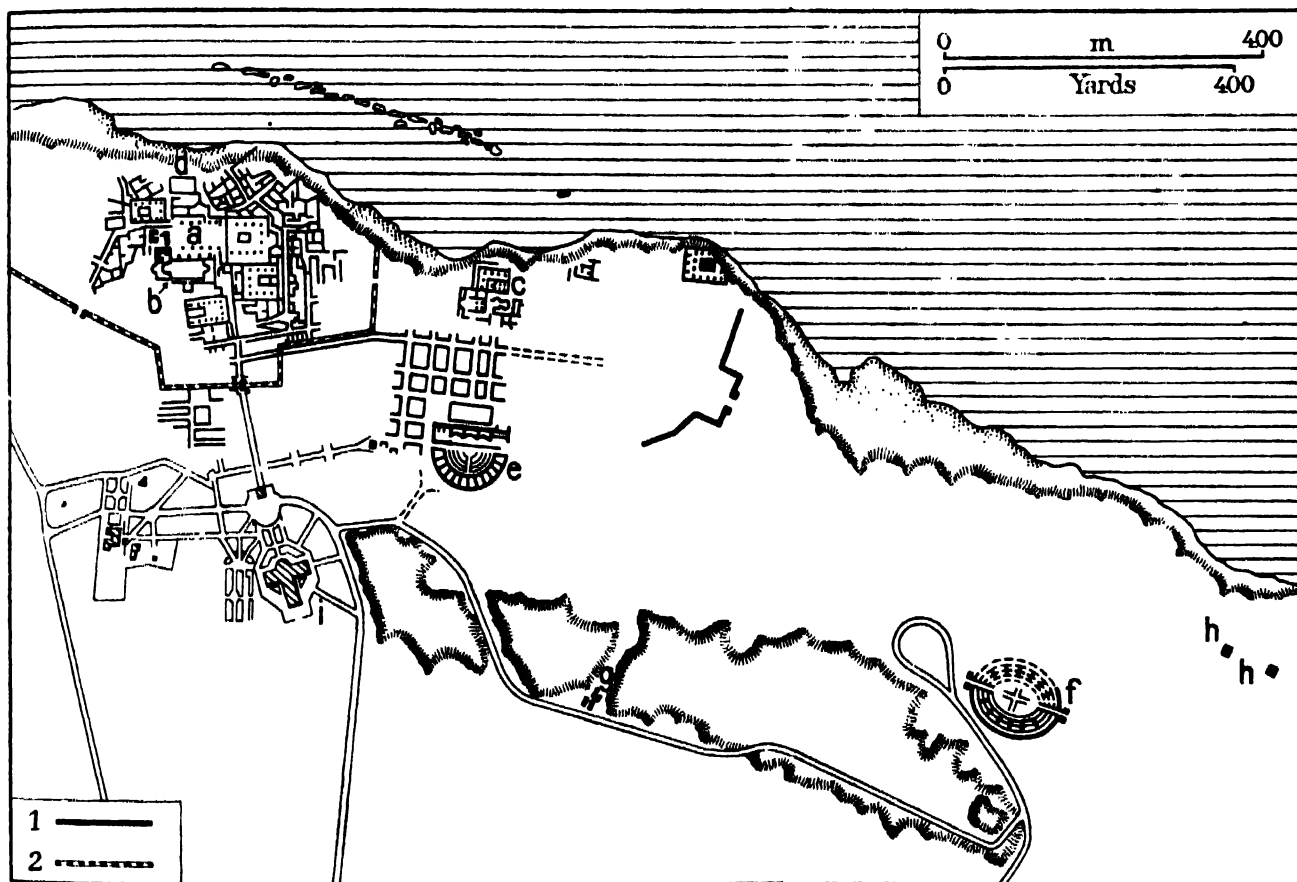
The ruins of the city include an early section of irregular form situated near the port and one of the Roman imperial era with rectilinear streets east of the older one. The city is enclosed in two circles of walls, the Roman including the entire monumental area exclusive of the amphitheater, and the Byzantine, more restricted, enclosing the oldest part of the city. Near the port is a rectangular forum from the Roman imperial age having colonnades on three sides and surrounded by edifices of different periods (1st to 4th centuries). On the west is a temple to Jupiter Ammon from the time of Augustus, preceded by the tribunal for orators. To the east is a temple of Oriental type, probably consecrated to Liber Pater, preceded by a portico and surrounded by a double colonnade showing three phases of construction; to the north is the curia, built probably after A.D. 365, composed of a portico and a hall; to the south, behind a long portico and shops, is a Christian basilica built over the ancient judicary basilica, with a nave and two aisles and an apse; beside it is the baptistery in the form of a Greek cross. To the north beyond the curia is the Justinian basilica with a nave and two aisles preceded by a narthex, with a beautiful mosaic pavement. Two other temples are joined to the forum. One, to the northwest, dedicated to Serapis, has an almost square cella surrounded by a colonnade;

the other, to the southeast, dedicated to an unknown deity, has four columns on the façade and is surrounded on three sides by a portico; it was built at the time of Antoninus Pius by the proconsul M. Acilius Glabrio. Near the square are fountains and houses. In the new quarter are the theater, dating from the end of the 2d century and the beginning of the 3d, and north of the theater are private houses and two important Christian basilicas with a nave and two aisles, the smaller built on the remains of a large edifice, perhaps a storehouse. Between the theater and the sea are the rather small, richly decorated baths of the theater, in the tepidarium of which was found a beautiful bust of Oceanus. The *thermae* at the sea are the most important in the city, and the southern baths, connected to a villa, have beautiful mosaic pavements. The Temple of Isis, at the extreme northeast limit of the city, was built in three stages (Augustan, end of the 1st century, and 2d century) on a level area at the edge of the sea;

Misurata. It was a prehistoric station. In the Roman era it had some importance as a port and was a municipality. On the "Square of the Castle," on the south side, is a passageway that goes down to a Christian underground room, from the end of the 4th century, with a flat ceiling supported by three piers and compartments disposed in three or four rows; trenches were dug in the floor later. Many tombs have inscriptions, usually in Latin and only rarely in Greek. Within a radius of some 20 miles are numerous remains of cisterns.

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Tripoli (Phoenician, Uai'at; Lat., Oea, Oenasis, then Tripolis; Gr., Οἶζ, Ἐώα; Ar., Tarabulus el Garbi). Tripolitania, located almost midway between Leptis on the east and Sabrata on the west,



Sabrata. Key: (1) Roman walls; (2) Byzantine walls. Sections and monuments: (a) Forum; (b) Christian basilica and cemetery; (c) basilican complex; (d) Byzantine basilica; (e) Theater; (f) Amphitheater; (g) Punic cemetery; (h) Roman mausoleums; (i) Museum.

it is peripteral, with four columns on the façade, and stands on a high podium surrounded by a rectangular peristyle. It has a propylaea-like monumental entrance and numerous chapels on the wall at the rear. The amphitheater, about a half mile east of the theater, is from the 2d century. South of the theater are the remains of a cistern and farther on the ruins of an aqueduct. There are a cemetery with Roman tombs at the east of the amphitheater, a Punic cemetery south of the theater, numerous villas, and a museum.

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Sirte, or Gasr Zaufuran (ancient name, Macomades Sclorum, Turris Euphranta). Tripolitania, on the coast 290 miles west of

on a sort of promontory of the Libian coast, Tripoli was founded by the Phoenicians. The city had no particular importance during the domination of the Carthaginians, although it belonged with Leptis and Sabrata to the region of the Emporia. Enlarged at the beginning of the Roman empire, it always remained inferior to Leptis, with which it was at war in A.D. 69 (Tacitus, *Historia*, IV, 50). In the second half of the 2d century it reached its greatest economic and political importance when it became a colony. Its decline, which began with the invasion of the Austurians in 363-67 (Ammianus Marcellinus, XXVIII, 6, 10), was aggravated during the Vandal period (5th cent.). Flourishing anew after the reconquest by Justinian, it declined again with the Arab invasion in 642-43. The city survived because the Arabs established there the administrative and military center of the territory, but this brought about the destruction of the Roman monuments.

There are few remains. The city wall probably existed in the Roman period and was limited to the land side as a defense against the nomads. There are walls clearly of the Byzantine era. An arch dedicated to Marcus Aurelius and situated at the crossing of the principal east-west and north-south streets near the port was raised in A.D. 163-64 by C. Calpurnius Celsus; it is a four-faced arch with

niches, ornamented with reliefs. The temple of the Genius Coloniae was dedicated by the proconsul L. Emilius Frontinus in A.D. 183-84. The remains of a monumental edifice beneath the castle date from the 2d or 3d century. There are Mithraic tombs containing paintings at Mellaha and at Gargaresc under the fort northwest of Tripoli, the funerary furnishings from which are in the archaeological museum of the castle. Among the most important exhibits in this museum are a statue of Artemis of Ephesos from Leptis and mosaics, from Zliten, of games in the amphitheater, the seasons, and garlands.

Destroyed by the Spanish in the first half of the 16th century, the city was completely rebuilt by the Turks in the second half of the same century. In the old city are notable houses in the Arab-Turkish style and important mosques. The Mosque of the Caramanli, of hanifite type, begun in 1736, and ornamented with stuccos and polychrome majolica, is one of the richest specimens of 18th-century Islamic art. The elegant Mosque of Gurgi, also of hanifite type and begun in 1833, has a very tall minaret. The Mosque en-Naga is the oldest in the city, founded perhaps in the 10th century and completely rebuilt in the 17th.

The "Castle of Tripoli," which has existed since the end of the Roman era, was restored by the city magistrates in 1300, fortified by the Knights of St. John in 1533, and had its period of great splendor from 1711 to 1745, when the interior was embellished at the command of Ahmed el Caramanli. It fell in 1835 with the coming of the Turks and was restored after the Italian conquest. The archaeological museum of the castle contains also original Arab-Turkish works.

The modern development of Libia began only in 1913, after the Italian conquest: the old walls of Tripoli were restored and the city assumed a more metropolitan character with the construction of numerous public and commercial buildings.

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Zliten (ancient name, Subgoli; Sugolin on the Peutinger Map). On the coast of Tripolitania, 20 miles east of Leptis Magna. It was founded in 520 B.C. on the bank of the Cinyra (Wadi Caam) by the Spartan Dorieus and destroyed after three years by the Libyans and the Carthaginians (Herodotus, V, 42). It grew up again later under the name of Sinipsa and at the beginning of the 5th century was the see of a bishop. Of the ancient Cinyra there remain only the works for regulating the waters. About 2½ miles west of Zliten, at Dar-Buk-Ammara, are the ruins of a large villa whose frescoes and mosaics, from the 1st century, are now in the museum in Tripoli. Especially notable among these are mosaics of games in the amphitheater (Pl. 22), of the seasons, of garlands, of Dionysus on a panther, and of a marine landscape. Connected to the villa was a private bathing establishment. There is a mausoleum of Such-el-Giūmas, in the form of a rectangular temple built over a crypt with various compartments carved in the walls. Near Zdu, a chamber tomb from the end of the 3d century is carved out over a small cistern. Other remains are a stele with the symbol of Tanith, a stele with a neo-Punic inscription, and various inscriptions and architectural fragments.

BIBLIOG. S. Aurigemma, *I mosaici di Zliten*, Rome, Milan, 1926; A. Merighi, *La Tripolitania antica*, Verbania, 1940 (with bibliog.).

TUNISIA. In this region the remains from prehistoric times are not noteworthy artistically. The historic centers are as follows:

'Ain Hedja (Agbia). Byzantine fortress 36 × 23 yd.

'Ain Tunga (Thignica). Fortress from the time of Justinian.

Al Mu'āsāt. Byzantine church with polychrome mosaics.

Béja (Lat., Vega, Vaga). Byzantine walls with square towers at the angles and 22 towers on the perimeter; nearby is a bridge from the time of Tiberius, restored under Vespasian.

Bizerte. Today Bizerte has the appearance of two cities side by side, one old and picturesque, now partially destroyed, and the other very recent, joined to the older one by a bridge and including the new center of Zarsouna, which is planned so that it comprises

military, industrial, and harbor zones with an arsenal, a civic center of European metropolitan character, and residential quarters.

Butria (Lat., Acholla; Gr., Ἀχόλλα). Region of the Sahel (Bizacena) on the east coast of Tunisia 25 miles north of Sfax and 6 miles south of Cape Kaboudia.

Ptolemy's error in describing Acholla as situated north of Cape Kaboudia prevented its being identified until 1947, following the discovery of a dedication in the name of the people of Acholla. According to tradition it was founded by Maltese colonists of Punic culture. Allied with Rome in 149 B.C., it was one of the seven free cities of the province of Africa. In 46 B.C. it supported Caesar and had therefore to undergo the siege of the partisans of Pompey. During the second triumvirate it was deprived of its territory. It became a free city under Augustus and is perhaps to be identified with the municipality Aelium Aurelium Chlulitanum (CIL, VI, 1684). It was the see of a bishop in 484 and 641.

A paved square, perhaps the forum, is flanked by the thermae of Trajan, built about A.D. 115-20 and adorned with mosaics celebrating the expedition against the Parthians, and by the house of Asinius Rufinus, nominated senator by Commodus and consul in 184 (the mosaic representing the labors of Hercules certainly goes back to that year). East of the baths of Trajan is the "House of the Red Columns," which is ornamented with mosaics and frescoes. To the south are an amphitheater and baths from the first half of the 2d century, with mosaics representing a marine procession. North of the square are the Villa of the Triumph of Neptune, which dates from the time of Antoninus, another villa of the same era with mosaics, and a Christian cemetery containing tombs decorated with mosaics. To the east along the coast are the port, in a good state of preservation (the breakwater is submerged), an edifice called Ksar el-Flous, a tophet, or place of sacrifice, two baptisteries, and Christian tombs with mosaics. On the coast about 6 miles south of Acholla is Ruspe, today called Rosfa, which was famous because of the episcopate of St. Fulgentius. Nearby is Bordj Hallal, a Byzantine fortress of 328 × 273 yd. with 16 towers on its perimeter, one at each angle. At Butria there is an exhibition of the art of this region of Tunisia.

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Carthage (ancient name, Qart Hadasht; Lat., Carthago; Gr., Καρχηδών). Northwest of the Gulf of Tunis (see Tunis). It was a colony of Tyre, founded, according to legend, by Dido in 814 B.C.

Among the Punic remains are the fortifications — an external ditch that cuts across the isthmus between the Lake of Tunis and the Sebkhah el-Ariana, formerly the Gulf of Utica — and ports, including the lagoon of Salammbô (in the circular lagoon, or cothon, there are blocks of stone of a dike and on the small island of the admiralty the remains of a monument). Along the shore there are submerged blocks of stone leading from the quays. There are also a tophet consecrated to Tanith and Ba'al Hammon, with a votive shrine from the 8th century B.C., steles and sculptured and engraved tombstones, inscriptions, and urns with the ashes of children (800-146 B.C.); a little temple of Tanith in the area of the Oceanographic Station of Salammbô; the citadel of Byrsa, from the 2d or 3d century, on the hill of St. Louis; some ceramics kilns (Dermèche); wells and burial compartments from the 7th to the 2d century B.C.; the so-called "fountain of the thousand amphorae," which was the basin for storing water from a dammed-up spring in the reef of Bordj-el-Djedid.

The Roman colony called Iunonia was founded by Gaius Gracchus in 122 B.C. and then abandoned. In 29 B.C. a second colony, founded by Octavian according to the plans of Caesar, took the name of Colonia Felix Iulia Aurelia Antoniniana. Carthage was conquered by Genseric in A.D. 439 and from 533 to 698 was under Byzantine domination.

There are ruins of the circus, the amphitheater, a theater, and an odeum. The great thermae of Antoninus, abandoned at the time of the Vandals and then partially restored by the Byzantines, had a great court, latrines, and subterranean rooms in which architectural fragments and mosaics have been found. There are also the small thermae at Carmelo; a room with mosaics, perhaps a meeting place of the Augustales; the cisterns of Malga; the aqueduct of Hadrian; the reservoirs of Bordj-el-Djedid; and the basins of Dar Saniat. Along the shore in the zone of the port there are stone fragments leading from the basins, and in the circular lagoon are the remains of a quay from Byzantine times. On the hill of St. Louis and on the reef of Bordj-el-Djedid are remains of apsidal retaining walls.

There are numerous Christian basilicas: Douimes I, with a central nave and four aisles, a baptistery, and an oratory, from the end of the 5th century; Douimes II, with a nave and two aisles,

from the 6th century; Damus el Karita, with a nave and eight aisles, an atrium, and a baptistery (or rotunda) from the end of the 4th century but rebuilt in the 5th and 6th; Bir-Ftouha, with a trefoil baptistery of the 6th century; Midfa, or Basilica Majorum, with an atrium and crypt containing the epitaph of SS. Felicitas and Perpetua; and St. Monica, with a nave and six aisles and an atrium, from the 5th century. There are also a rotunda of the first years of the 4th century; the underground chapel of Asterius; and the monastery of St. Stephen with 5th- and 6th-century mosaics.

In the quarter of the theater and the baths of Antoninus Pius are streets flanked by houses, some of which have mosaic floors. A large edifice from the 4th century, with an apsidal hall and mosaics, has come to light over the tophet and the hill of St. Louis. The cemetery of the "officials" has also been excavated. There is a Roman wall, rebuilt and flanked by a wide ditch, and a fortified monastery in the region of the port (Mandrakion).

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Chemtou (ancient name, Simitthu). On the Medjerda River about 10 miles east of Souk-el-Arba.

Land in this area was distributed to Roman veterans probably at the time of Caesar or perhaps under Marius. At the beginning of the reign of Augustus, Simitthu became a city of Roman citizens and at the end of his reign a colony called Colonia Iulia Augusta Numidica. During the imperial era, the extraction of Numidian marble from the quarries, which were part of the imperial domain, made Simitthu an important industrial center. It is mentioned as the see of a bishop in 411 and 646.

The city was constructed on various semicircular levels on the sides of the hill from which the marble was taken. There are numerous remains, but almost all are much damaged: a large paved square, perhaps the forum, with a monumental exedra; two temples; a theater from the 2d century, erected on a flat area with two series of superposed arcades; the baths; public cisterns; and a large aqueduct that carried water from a spring about 14 miles away. There remain two arcades (about 50 ft. high) of a bridge over the Medjerda (Bagradas) which was constructed by the third Augustan legion. There are also the remains of another bridge about 60 yd. upstream from the first; a jetty; a dike, perhaps Byzantine; and two large Christian basilicas. The quarries, open and with galleries, were abandoned in the course of the 3d century.

Dougga (ancient name, Thugga). On a high plateau near a tributary of the Medjerda River about 63 miles southeast of Tunis

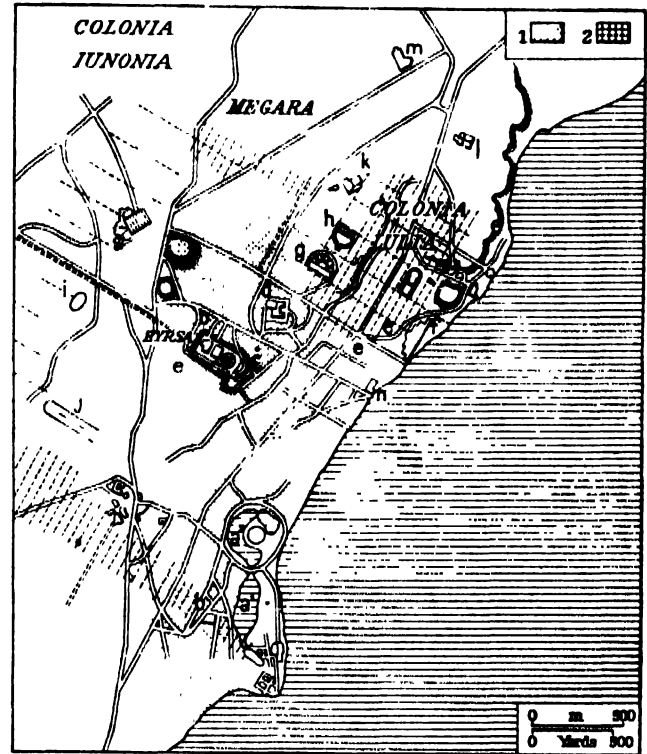
Known from Punic times, it was doubtless occupied in the first half of the 2d century B.C. by the Numidian king Masinissa. It became an autonomous municipality under Septimius Severus and a colony toward the middle of the 3d century, achieving its greatest splendor in the 2d and 3d centuries. It was a Byzantine stronghold.

Dougga is the most complete agglomeration of ancient ruins in Tunisia. The forum (150 × 81 ft.), from the time of Antoninus Pius, is surrounded on three sides by a colonnade of marble; to the east is the capitol (enclosed, like the forum, in a later Byzantine fortification), which has a sculptured pediment, a pronaos, and a tripartite cella. Beside the forum, and placed symmetrically with it, is another square with a compass rose engraved on the pavement, flanked by two temples, one of which has a tripartite cella and is dedicated to Mercury. South of this cluster of ruins are the temples of Tellus, Concordia, Frugifer, and Liber Pater, as well as thermae from the 3d century. To the southeast are other baths and luxurious houses whose mosaics are preserved in the Alaoui Museum in Tunis. At the edge of the city is the Arch of Septimius Severus. To the south, in an isolated position, is the celebrated Libyo-Punic mausoleum of the 2d century B.C., inscriptions from which are in the British Museum. This consists of three receding stories resting on a stepped base and terminating in a pyramid. Its total height is about 70 ft. It is ornamented with architectural motifs and sculpture—lions, knights, winged female figures at the angles, and bas-reliefs. North-northeast of the central quarter is the theater, from the 2d century, with 25 tiers surmounted by a portico. The stage is in a good state of preservation, and it has been possible to restore the colonnade. The proscenium is supported by vaults and has a mosaic pavement. Behind the stage is a Corinthian portico. Beyond the theater, on a spur of the hill, is the Temple of Saturn, from the end of the 2d century, composed of a tripartite cella opening on a large court with a portico preceded by a vestibule with columns. West of the temple is a cemetery, remains of fortifications from various times, a temple of Minerva, large cisterns, and a circus from the beginning of the 3d century. To the west of the forum are two groups of reservoirs

at the termination of the aqueduct, the Arch of Alexander Severus, and the temple of Tanith-Caelestis, of the same period, situated in the center of a semicircular court with a Corinthian portico. At one time a Byzantine redoubt was established in one of the Roman temples

BIBLIOG. L. Carton, *Thugga*, Tunis, 1929; C. Poinssot, *Les Ruines de Dougga*, Tunis, 1958.

El Djem (ancient name, Thysdrus). In the interior of the region of the Sahel, between Sousse and Sfax. Mentioned for the first time



Carthage. Key. (1) Probable boundaries of the Punic city (2) limits of the Roman colony. Sections and monuments: (a) port, outer and inner; (b) Sanctuary of Ba'al Hammon and Tanith; (c) Acropolis, Cathedral, and Musée Lavignier; (d) hill of Juno, (e) Punic cemetery, (f) Antonine baths; (g) Theater, (h) Odeon; (i) Amphitheater; (j) Circus; (k) Basilica of Damus el Karita; (l) Basilica of St. Cyprian, (m) Basilica Majorum; (n) Palace of the Beys (Dar Bessia).

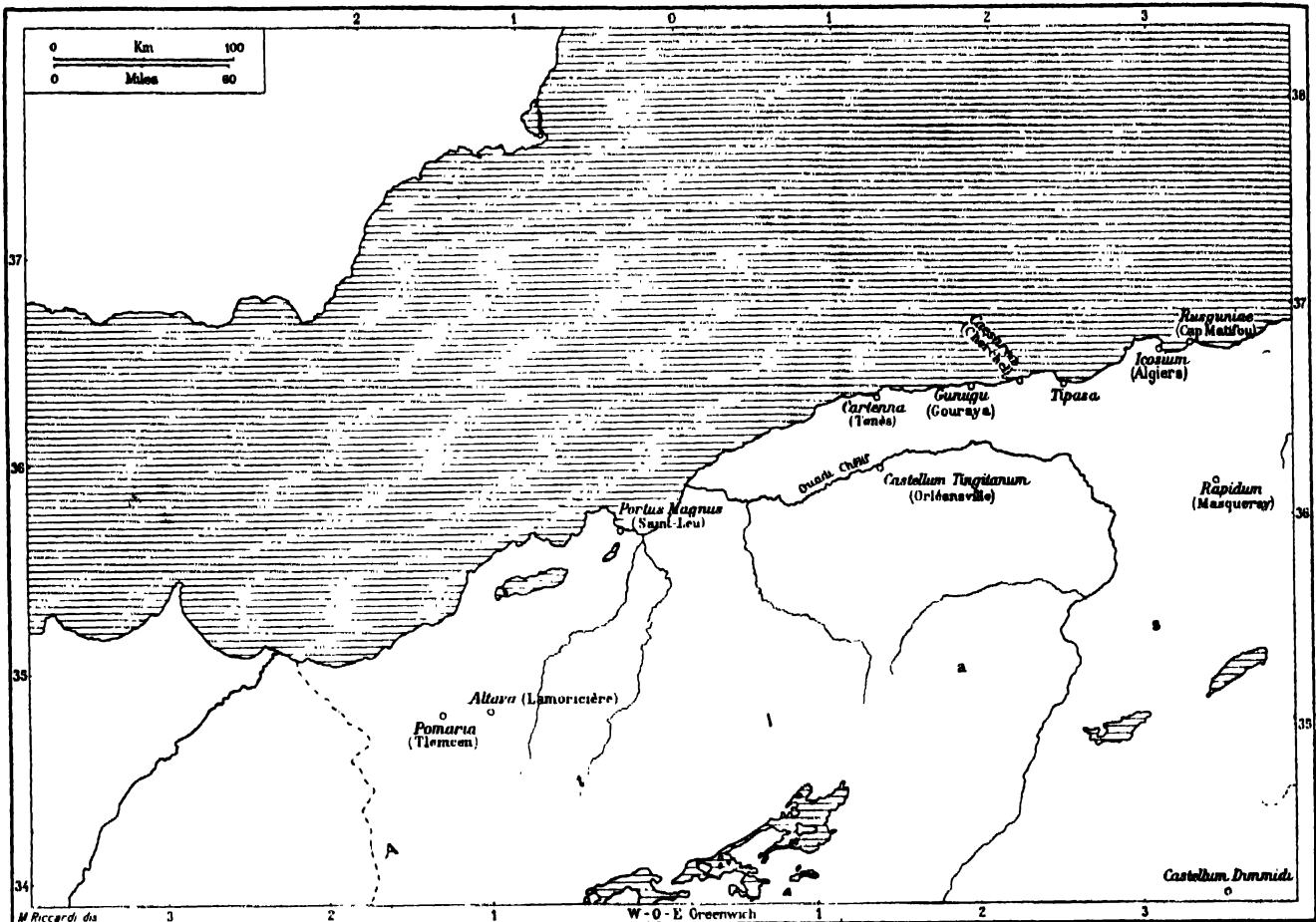
in the *Bellum Africanum* as a small fort, it probably owed its existence to the fertility of the surrounding land and to its location at a natural junction of lines of communications. Because of its precarious resources, Caesar did not impose a financial tribute on the city after the battle of Thapsus but asked only a contribution of grain. With the peace, its prosperity and population grew. At the time of Pliny it was one of the 30 free towns of the province of Africa, and later it became a colony. In A.D. 238 Gordian was proclaimed emperor there. It had several bishops. According to legend, Kahena, Queen of the Berbers, entrenched herself at Thysdrus in order to continue the struggle against the Arab invaders.

From the considerable number of ruins have come a large quantity of mosaics and sculpture, today conserved in the Alaoui Museum in Tunis. Baths, a circus (1,830 × 309 ft.), and a small and a large amphitheater have been excavated, the latter (450 × 402 ft. and 120 ft. high) in a good state of preservation. It has three rows of 60 arcades with composite and Corinthian half columns.

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Gabès (ancient Tacape). Virtually nothing remains from the Roman period. In the Jara quarter there are three mosques from the end of the 11th century (local dynasty of Bani Jarmi): Sidi Driss (Sidi Idris), Sidi 'l'Hadj Amer, and Sidi Aissa. There is a regional exhibit of Tunisian art, carpets, embroideries, laces, and tapestries of Matmata, Udref, and Gabès.

Gafsa (Lat., Capaa; Gr., Κάψα). From prehistoric remains found in the region the Capsian culture received its name (see above).



West central Algeria: principal centers of antiquity.

There is a regional exhibit of products made by Tunisian artisans in the Byzantine citadel.

Gighti (ancient name, Gigthis). On the coast of the Gulf of Gabès, opposite the island of Djerba. It was first a Punic station but grew to considerable size in the 2d century. It was conceded Roman rights at the time of Hadrian and became a municipality under Antoninus Pius.

The large forum, on a height facing the sea, is surrounded on three sides by a Corinthian portico ornamented with statues, and on it opened the temples of Apollo and Hercules and the Pantheon. At the rear of the forum is the capitol. Toward the sea, a street that passes under the arch of triumph separates the curia from a judiciary basilica. In the outlying quarters beyond the market, which is delimited by porticoes and terminated by a semicircular exedra of shops, there were a temple of Mercury, some large, one-story baths, a large edifice with a gymnasium and palaestra, and a luxurious suburban villa.

BIBLIOG. L. A. Constans, *Nouvelles Archives des Missions*, fasc. XIV, 1916, p. 1-113.

Haïdra (ancient name, Ammoedara). On the left bank of the Wadi Haïdra. It was under the government of Sbeitla and in the Roman province of Bizacena. It was a military fortress established in the territory of the tribe of the Musulami and at the time of Augustus probably served as the winter camp of the third Augustan legion. After the camp was transferred to Theveste in A.D. 74-75, it became a colony of veterans under the name of Colonia Flavia Augusta Emerita. In the 2d century it developed notably as an agricultural and communications center on the road between Carthage and Theveste. The city was again of military importance in the Byzantine era, and Justinian constructed a citadel there. Bishops are mentioned from 256 on.

A square surrounded by porticoes and a temple with four columns are perhaps the remains of the forum and the capitol. There is a theater, perhaps from the beginning of the 3d century, restored in A.D. 299; a large edifice with windows, which has not been identi-

fied; an apsidal edifice with compartments for storage of merchandise; the Arch of Septimius Severus, and a second small arch on the right bank of the wadi. In the two extensive cemeteries are Christian burial areas with monuments and mausoleums. Outside the city is a temple of Saturn, perhaps an indigenous sanctuary. Among the churches are that of the Bishop Melleus, where the relics of St. Cyprian were deposited in 568-69; a church near the citadel; and in the eastern cemetery the Basilica of Candidus with the chapel of the martyrs of the persecution of Diocletian. There is also the large Byzantine citadel and the fort. The fortifications that protected the city formed a quadrangle of about 660 × 360 ft. and enclosed various military installations and a church. This wall was protected by one circular and nine square towers and was cut by numerous gates, one of which opened on a bridge 96 ft. wide.

BIBLIOG. *Atlas archéologique de Tunisie*, fasc. 40, no. 5; Cabrol-Leclercq, s.v.; Piganiol, Laurent-Vibert, *Mél.* XXXII, 1912, pp. 60-220.

Hamman-Derradji (ancient name, Bulla Regia). Four and a half miles northeast of Souk-el-Arba. Before the Roman conquest it was one of the principal cities of the kingdom of Numidia. At the beginning of the reign of Augustus it was a free city, and at the time of Hadrian it became a colony with the name of Colonia Aelia Hadriana Augusta. Mention is made of bishops in 256, 390, 411, 525, 646, and early in the 8th century; in 411 it had a Donatist bishop.

The site is extensive, but on the whole few remains are visible, among them a temple of Apollo, "deus patrius," and the Augustan Gods, built under Tiberius (34-35), with a tripartite cella opening on a court surrounded by porticoes; a forum constructed at the time of Hadrian; the capitol; a judiciary basilica; an arch of triumph with one arch; vast baths from the end of the 2d century; a six-sided underground room; a large nymphaeum with two basins; two groups of public cisterns and numerous private cisterns; a theater and an amphitheater; some houses, many of them quite luxurious, with mosaics from the 2d or 3d century and an underground story probably designed for summer living; a large Christian basilica with a nave and two aisles and a baptistery; the so-called "Church of the Priest Alexander"; and a small Byzantine citadel and traces of walls of

various rooms. The center of this section is dominated by a heavy minaret of three stories, all square in plan. The lowest, which rises to a height of 82 ft., and is 35 ft. on a side, slopes slightly in the upper part, forming a truncated pyramid.

The cupola directly in front of the mihrab is richly decorated inside: 24 ribs come together at the summit of the dome; running around the whole surface of the drum are 24 openings topped by round arches and masked by floral ornaments in pierced gypsum; 8 of these openings correspond to the windows that open on the exterior walls of the drum itself.

The corner arches, which make the transition from the drum to the square base, are fluted like shells and are connected by lobed arches pierced in the center by lobed oculi. The use of pendentive-like arches, very common in the Islamic architecture of Ifrikia, is perhaps an Oriental importation, but it also has precedents in the local architecture of the ancient period.

The mihrab is composed of a niche richly decorated in the interior by panels of marble pierced in a floral and geometric design and preceded by a pointed arch resting on the capitals of two columns. The whole wall and the face of the arch are covered with luster tiles from Mesopotamia. The pediment topping this checkerboard has five recesses: a central arch flanked by two niches pierced by windows consisting of marble openwork grilles, and two arches that flank the whole at the sides.

The ceilings have wooden beams perpendicular to the *qibla* (kiblah) wall, that facing Mecca, and are covered by wooden panels. The principal ornament is a magnificent painted floral decoration from the Ziridic period, perhaps inspired by Sassanian art, or rather by the mosaic, in the Hellenistic tradition, which decorates the Dome of the Rock in Jerusalem (end of 7th cent.).

One of the most beautiful ornaments of the Great Mosque of Kairouan is the pulpit (*minbar*) decorated with a series of small wood panels, pierced and carved with delicate floral and geometric designs. Even the steps leading up to the pulpit are carved, and the *maksoura*, a huge screen also of the Ziridic period, is of pierced wood in cross-shaped sections delicately carved with floral decorations and the letters forming the names of the donors.

The Great Mosque of Kairouan was for several centuries the mainspring of inspiration for the religious architecture of North Africa, and its influence appears in the ground plans and decorative motifs of most of the mosques of this early period.

The Mosque of the Three Doors is of the same architectural type as the Great Mosque and has a fine façade bearing an inscription with the date of its foundation, 866. The Mosque of the Sabers, or Djami Amor 'Abbād, was built in the first half of the 19th century. The zaouia of Sidi 'Abid al Gharyān, built toward the end of the 14th century, contains some fine examples of 11th-century decoration, doubtlessly taken from the ruins of Sabra-el-Manṣūriyya. The zaouia of Sidi Sāhab, called the Mosque of the Barber, was built at the beginning of the 17th century and is decorated with fine Tunisian ceramics. There are reservoirs in the area built by the Aghlabids (9th cent.), and water cisterns of circular or polygonal plan, the largest of which measures 420 ft. in diameter and has 48 sides. A second reservoir, 100 ft. in diameter, is connected to one of those built by the Aghlabids. The city walls and the gates in their present state go back to the 15th century. The Museum of Tunisian Art contains fine collections of carpets and ancient and modern fabrics, chased copperwork, wrought iron and damascened steel, carved wood, and jewelry.

BIBLIOG. H. Saladin, *La Mosquée de Sidi Okba à Kairouan* (Les Monuments historiques de la Tunisie: Les monuments arabes), Paris, 1899; H. Saladin, *Tunis et Kairouan, Les villes d'art célèbres*, Paris, 1908; F. Peuet, *Kairouan, Tunis*, 1911; G. Marçais, *Coupoles et plafonds de la grande mosquée de Kairouan*, Notes et Doc. publiés par la Direction des Antiquités et Arts, Tunis, 1926; A. Fikry, *La Grande Mosquée de Kairouan*, Paris, 1935; G. Marçais, *Plafonds peints du IX^e siècle à la grande mosquée de Kairouan*, RAA, 1935; L. Torrès-Balbas, C. R. Fikry, *La Grande Mosquée de Kairouan*, Al-Andalus, III, 1935, p. 135 ff.; G. Marçais, *Tunis et Kairouan* (Les villes d'art célèbres), Paris, 1937; G. Marçais, *Le Tombeau de Sidi Oqba*, Ann. de l'IEO, Algiers, VI, 1930-41; B. Roy, P. Poinasot (with L. Poinasot), *Inscriptions arabes de Kairouan*, I, 1950; H. Abd el-Wahab, *Bisat el aqiq*, sur la ville de Kairouan et le poète Ibn Rachiq, Tunis, 1330 A.H. (1952).

Kasserine (Cillium). In the ancient province of Bizacena, between Tébessa (Theveste) and Sbeitla (Sufetula), on the north side of a hill not far from a wadi. It was a city of little importance, a municipality under the Flavians and a colony in the 3d century; it was to some extent inhabited until the Byzantine period.

There have been found a triumphal arch, a well-preserved small theater, and two mausoleums, one of which, in a good state of preservation, is of three stories and is famous for the metrical inscription (110 verses) of Flavius Secundus. A church and Byzantine outposts remain from the Christian period.

BIBLIOG. H. Saladin, *Nouvelles Archives des Missions*, II, 1892, p. 9 ff.; E. Habelon, R. Cagnat, S. Reinach, *Atlas archéologique de la Tunisie*, Paris, 1893, no. 70.

Kaar Barai. The bastions extend around an irregular plain of 985 × 1070 ft. At Henchir Guesses, to the north of Aurès, they are of even larger dimensions: 1,460 × 1,140 ft. Also notable are the fortifications of Tipasa, Ain el Bordj, Guelma, and Maïla.

Ksaur el Kraib. Fort, 130 ft. on each side, from the Byzantine period.

Kululis. Byzantine citadel.

Le Kef (Sicca Veneria). Byzantine basilica, the so-called "Dar el Kua," with five semicircular niches in the apse, and covered by a ribbed half-dome. Byzantine stronghold.

Lorbeus (Lat., Oppidum Laribus, Labres). Byzantine citadel, 721 × 666 ft.

Maharès. Mosque occupying the site of a 9th-century ribat (period of the Aghlabids).

Mahdia (al-Mahdiyya). Constructed by the Fatimids and endowed with a mosque built about 916 and notable especially for a projecting portico analogous to ancient triumphal arches but still close to the art of the Omniads of Syria and the Abbassides of Mesopotamia. It opens onto a court 162 × 128 ft. surrounded by galleries with stilted arches.

The sanctuary has nine aisles separated by rows of columns and seven bays originally covered with groin vaults but now with a wooden ceiling. There were bastions and Fatimid gates of which there remains only the one called "Sqifa al-Rahla." Of the Fatimid port and arsenal there are only slight traces. Work now in progress has revealed a part of the plan of the palace of al-Qa'im, son of al-Mahdi, founder of the Fatimid dynasty.

BIBLIOG. H. Saladin, *Les monuments de Mehefiya*, d'après les documents de MM. Bernard et Duckel, B. Archéol., 1913.

Maktar (Mactaris). Region of the upper Tell. Situated in the territory of the Massilians, the city probably was founded in the 2d century B.C., as the pottery fragments found in a cremation pit would indicate. Certainly from its beginning Punic colonists established themselves there. During almost the entire 2d century the city had a quasi-municipal status, and under Marcus Aurelius and Commodus it became a Roman colony with the name of Colonia Aelia Aurelia Mactaris. In 236 it was an episcopal see and later had a Donatist bishop. It was occupied by the Vandals and the Byzantines.

Numidian monuments include the megalithic tombs dating from the 1st century B.C. to A.D. 100 and a city wall from the middle of the 1st century B.C. with Libyan inscriptions. Punic monuments include the Temple of Hathor Miakar with a neo-Punic dedication from the second half of the 1st century, and a tophet dedicated to Ba'al Hammon, with numerous sculptured steles and inscriptions, datable from the 1st to the 3d century. The principal Roman monuments are a square from the 1st century, dominated by the subterranean temple of Liber; the forum, built in the time of Trajan, with a triumphal arch dedicated to this emperor in A.D. 116 and fortified in the Byzantine period; the schola, subsequently transformed into a church; the great eastern baths from the end of the 2d century and the western ones built in 170 and transformed into a church in the 5th century; two other smaller bath buildings, from the 3d and 5th centuries; two buildings with magazines for the storage of merchandise, probably the receiving office of the grain trade; an unexcavated amphitheater; a triumphal arch that is also the gate of the city; the Temple of Apollo, located outside the walls; several mausoleums; the aqueduct; the Basilica of Rutilius, now destroyed, and the Vandal one of Hildegundus. Tombs of the period of the Vandal occupation have been found.

BIBLIOG. G. C. Picard, *Mactar*, Bulletin économique et social de Tunisie, Tunis, 1954, no. 90; G. C. Picard, *Civitas Mactaritana* (in course of publication).

Medcina (Althiburos). In the central western region about 25 miles south of Le Kef. Punic-Numidian city of the Massilian kingdom, of which some megalithic tombs remain. Punic inscriptions mention some magistrates and a society (*misrach*).

The cult of Ba'al Hammon was practiced here; in the environs of the city (Ain Barchouch) was a neo-Punic sanctuary of the Sun and of the Ceres. Althiburos was a municipality (Aelium Hadrianum Augustum) in 128 and became a colony under Septimius Severus or shortly thereafter. Bishops are recorded there in 411, 484, and 646, and there was a Donatist bishop in 411.

The forum is surrounded by porticoes; to the south is the capitol, built in the time of Commodus. On the street between these rises a single arch dedicated to Hadrian. To the northeast is a temple, which, according to a bilingual inscription, was dedicated to Jupiter and Aesculapius; to the west are scholae and shrines of Jupiter and Minerva. There remain also some houses of the 3d century decorated

with mosaics, one of which is a figural compendium of means of maritime transport, and a building for industrial use (a fuller's or dyer's shop).

BIBLIOG. P. Gauckler, *Un catalogue figuré de la batellerie gréco-romaine: La mosaïque d'Althiburos*, MPot, XII, 1905, p. 113 ff.; A. Merlin, *Forum et Maisons d'Althiburos*, Notes et Doc., VI, Paris, 1913; P. M. Duval, *La forme des navires romains, d'après la mosaïque d'Althiburos*, Mél. LXI, 1940, p. 119 ff.

Monastir. Ribat built in 796. Large mosque, built probably in the 9th-century period of the Aghlabids. Oratory of Saïda, small monument of the 10th or 11th centuries (Sanhaja-Fatimid period). Kubba of Sidi al-Mâzari, 12th century (Ziridic period). Gates called Bâb al-Sûr and Bâb al-Darb, 13th century (Hafsidic period).

Nabeul. Regional exhibition of Tunisian art: textiles from Cape Bon, embroideries of Nabeul and of Hammamet, lace, Nabeul ceramics, wrought iron, woodwork, jewelry, rush mats.

Oudna (Uthina). In the valley of Wadi Miliane. Colony created by Octavian with veterans of the thirteenth legion (*Colonia Iulia Tertiadecimanorum*) and enlarged by Hadrian, who doubtless incorporated into it the ancient native city that survived next to the colony. Bishops are mentioned in 256, 314, 411, 419, 525, and at the beginning of the 8th century; a Donatist bishop is mentioned in 411.

There exist remains, partially covered, of many buildings, mostly from the Antonine and Severan periods: a large temple on a stylobate, perhaps the capitol; a single triumphal arch; the theater; the amphitheater; extensive baths; three groups of large public reservoirs, of which one is divided into three aisles by piers; a great number of private cisterns; wells; an aqueduct; houses, some of which, like that of the Laberii, have rich mosaic floors from the 2d and 3d centuries; a Christian basilica with three apses and another with a circular crypt; three other churches or chapels; two bridges over the Miliane Wadi, one of which has three arches.

BIBLIOG. E. Babelon, R. Cagnat, S. Reinach, *Atlas archéologique de la Tunisie*, fasc. 30, no. 48; P. Gauckler, *Le domaine des Laberii à Uthina*, MPot, III, 1897, fasc. 2; P. Quoniam, *Sculptures trouvées à Oudna*, Mél. LX, 1948, pp. 35-54.

Rakkada. The princes of Kairouan lived for the most part at Qasr al-qadim (Al-'Abbâsiyya) or at Rakkada. Of these places, famous in Islamic history, little or nothing remains. Recent excavations at Rakkada have, however, brought to light some vestiges, among which is a mosaic pavement in the antique style.

Saribus (Sahès). Byzantine citadel 715 × 863 ft.

Sbeitla (Sufetula). Government of Sbeitla; Roman province of Bizacena. It was a municipality and later a colony, perhaps at the end of the 2d century. It was situated at the intersection of two roads in an agricultural region with many olive orchards. It had its greatest development in the 2d century and became an important center under Byzantine domination; about 646 it was the capital of the Patrician Gregorius. Bishops are mentioned from 256.

There are traces of paved streets arranged according to the principle of centuriation. Remains include a vast paved square with a portico, a gate with three arches (A.D. 140-43), and three undated temples, perhaps the forum with the capitol; to the north another temple; extensive winter baths; three monumental fountains; an amphitheater; a theater that may be from the time of Diocletian; to the southwest the Arch of the Tetrarchy; to the north a destroyed arch (209-11); sumptuous residences of the period of the late Roman empire; and vast cemeteries. The city was supplied with water from mountain springs channeled by means of a subterranean aqueduct and an aqueduct of the bridge type. There are many churches: that of the priest Vitalis (5th cent.) with a baptistery and a baptismal font decorated with mosaics; that of the priest Bellator (5th cent.) with a chapel of Bishop Jucundus; that of the priest Servus, with a baptistery, built in the court of an earlier building, perhaps a temple; that of SS. Gervasius, Protasius, and Tryphon (6th cent.); and one near the amphitheater, the martyrdom church of SS. Silvanus and Fortunatus, which may have had a dome. Two miles to the southwest is the chapel of Bishop Honorius, 43 × 40 ft., with a nave and two aisles. There are the remains of a Byzantine camp constructed with material from the enclosure walls of Roman temples, and five fortified redoubts to the southeast and to the south cover the surroundings of the square.

BIBLIOG. *Atlas archéologique de Tunisie*, XLVIII, no. 18; Cabrol-Leclercq, s.v.; A. Merlin, *Forum et Eglises de Sufetula*, Notes et Doc., V, 1912; L. Poinssot, *La chapelle de l'évêque Honorius (environs de Sbeitla)*, B. Archéol., du Comité des travaux historiques et scientifiques, 1932-33, p. 783 ff.; N. Duval, *Nouvelles recherches d'archéologie et d'épigraphie chrétiennes à Sufetula*, Mél. LXVIII, 1956, pp. 247-98.

Sfax (Taparura). To the north of the Gulf of Gabès (Syrtis Minor), opposite the Kerkennah Islands. Roman center of Bizacena, located by Ptolemy (IV, 3, 2-3) and by the Peutinger Map (Seg. VI, 4) between Usilla (Inchilla) to the north and Thaeae (Henchir Tina) to the south.

The prefix *Ta-* (cf. Tacape, present-day Gabès) indicates that the city must originally have been a Libyan establishment, but the rare archaeological remains date from the late Roman or Early Christian period. It was an episcopal see, and a bishop of Taparura is mentioned in the year 411. The Arab city of Sfax, built with materials from the Roman city—the reused blocks and columns are still visible—and in the same area, has almost completely obliterated the ancient remains. In the outlying areas there have come to light some villas decorated with mosaics and cemeteries, both pagan and Christian, with funerary inscriptions.

Among the noteworthy Islamic monuments is the Great Mosque, built in the 9th century. It underwent significant modifications and enlargements in the 10th and 11th centuries. Part of the eastern bastions, from the Aghlabid period (9th cent.), still survives. There is an exposition of Tunisian regional art, held in the Dar Si Ali Nuri mansion (9th cent.), displaying nomad carpets, draperies from El Djem and Djebeniana, embroideries from the Kerkennah Islands, lace from Sfax and Maharrès, work in copper and wrought iron, and braided straw of Kerkennah. The modern city owes its position as the most important community after Tunis to the construction of the new port (late 19th century) and to the fishing industry. Outside the beautiful Moslem city, the European city has had a disordered development and underwent, in World War II, considerable destruction. After 1944, a gigantic garden city built on a regular plan was constructed to the north of the city.

BIBLIOG. C. Tissot, *Géographie comparée de la province romaine d'Afrique*, Paris, 1884-88, II, p. 811.

Sousse (Lat., Hadrumetum, Adrumetum, Hunericopolis [5th cent.], Justinianopolis [7th cent.]; Gr., Ἀδρὺμης). Region of the Sahel; port on the east coast of the Gulf of Hammamet. A Phoenician port city founded in the 11th century B.C. by navigators from Tyre. Even in the 6th century B.C., the period in which the Carthaginian priesthood was reorganized, it was an important city; from this period date the tophet of Tanith and of Bu'al Hammon. It was devastated in 308 B.C. by Agathokles, and in 203-2 B.C. it was Hannibal's base of operations. After the destruction of Carthage it received a statute as a free city. In 46 B.C. it was besieged by Caesar, who imposed a heavy tribute on it. It became a colony under Trajan and reached its apogee under the Severi, trading with Rome rather than with the Near East. It was impoverished by the fiscal burdens of the Vandal kings (5th cent.) and surrendered to Belisarius in 533. At the time of the Byzantine domination the bishop of Hadrumetum held a very prominent position. In the 7th century the city was overcome and destroyed by the Arabs, and under the Aghlabids it became a fortress of Islam; the ribat (771), the bastions, and the kasba (850) date from that period.

There are the remains of a Phoenician tophet with some steles and pottery; a neo-Punic cemetery; baths and rich Roman houses containing mosaics, statues, stuccoes, and paintings, preserved in the museum; a cemetery with subterranean tombs for cremation burials; Christian catacombs of the 4th century; and remains of Byzantine fortifications and Islamic religious structures.

There are a number of Islamic monuments. The Great Mosque is noticeably different from those of Tunis even though it dates from 850. It has a nave and twelve aisles, the first three bays of which are covered with barrel vaults and reinforced by higher round, transverse arches. Three further bays have stilted round arches set at higher level than the first and bear depressed groin vaults. All these arcades spring from heavy cross-shaped piers. The mihrab is preceded by a cupola supported by an octagonal drum with concave faces that suggest that of the Great Mosque at Kairouan. The mosque of Bu' Fatata, which dates from the beginning of the 9th century, is rather similar, but it lacks an atrium and has a square plan. The mosque of Sidi Ali Ammar dates from the 9th or 10th century (Sanhaja-Fatimid period). Kahaout El Kubba, a Moorish coffeehouse, was an official monument about the 10th or 11th century, perhaps a tomb, a bath building, or an audience hall for the tribunal. At the exhibition of Tunisian regional art held at Sousse are displayed fabrics of the Sahel, embroideries, laces, and jewelry.

BIBLIOG. A. F. Leynaud, *Catacombes africaines*, Sousse, Hadrumète, Algiers, 1922; G. Marçais, *Sousse et l'architecture musulmane au IX siècle*, Ann. de l'IEO, VII, Algiers, 1948, pp. 54-66; A. Lézine, *Le Ribat de Sousse*, Tunis, 1956.

Teboursouk (Thubursicum Bure). Pentagonal enclosure 490 × 450 ft. with a small fort at each corner, dating from the Byzantine period.

Testour. Large mosque of Andalusian type built in the first half of the 17th century.

Thyna (Lat., Thanae; Gr., Θέναι). Seven and a half miles south-east of Sfax, between the road to Gabès and the sea.

It was a Roman port in the province of Bizacena and originally perhaps the Punic port of Thainat. The ancient geographers located Thanae between Taparura (Sfax) and Macomades Minores (Maharès), and, according to Pliny the Elder (*Naturalis Historia*, V, 24-5), it marked the end of the ramparts that separated Africa Vetus from Africa Nova. From Thanae a road led to Theveste (Tébessa). It was a *civitas peregrina* raised by Hadrian to the rank of a colony with the name of Colonia Aelia Augusta Mercurialis Thaenitan[orum]. It was an episcopal see from 255 to 649.

It is surrounded by a vast line of walls, dating from the 2d century, with round towers at regular intervals and monumental gateways. Within the walls are the baths, from which come fine mosaics preserved in the museum of Sfax and the Alaoui Museum in Tunis, remains of the aqueduct, reservoirs, a circus, and various constructions decorated with mosaics of a late period. Outside the walls, in the direction of Sfax, are pagan and Christian cemeteries from which inscriptions and funerary mosaics were taken to the Sfax museum.

BIBLIOG. R. Massigli, Musée de Sfax, Paris, 1912; K. Miller, *Itineraria Romana*, Stuttgart, 1916, p. 903; FA, II, 1949, no. 2831.

Tozeur. Mosque of the Bled El Hader, built between 1027 and 1030 (period of the Zirids) and enriched in 1193 by a decoration in the style of the Maghrib from the Banu Ghaniya. There are unusual houses with façades decorated with geometric designs of bricks in relief. There is an exposition of Tunisian regional art at which are shown textiles, embroidery, burnouses, and wickerwork.

Tunis. The Great Mosque, called Al-Zaytūna, first built in 732, was destroyed and rebuilt at the time of the Aghlabids in the second half of the 9th century. It presents many analogies with the Great Mosque of Kairouan. The Mosque El Ksar, built in the 12th century (period of the Banu Khorasan) is characterized by great simplicity. Its minaret was built in 1647. The Mosque of the Kasba, built about 1235 (period of the Hafsid), has a fine square minaret of Almohad style decorated with motifs of arches and panels with lozenges. The Mosque of Al-Hawā, or Tawfiq, was built in the 13th century; the Mosque Al Haliq in 1375; the Mosque Al Aqwās at the beginning of the 15th century; the Mosque Mellasine in 1435; the Mosque of Yūsuf Bey in 1616; the Mosque of Hammūda Pasha in 1655; the Mosque of Sidi Mahrez about 1675; the "Mosque of the Dyers" around 1716; the Mosque of Yūsuf Sāhib at Tāba' about 1812. There are many madrasahs; Chammaiyya, a Hafsid madrasah rebuilt during the Turkish period; Yūsufiyya, 1622; Murādiyya, 1674; Bachiyya, 18th century; an Nakhla, 18th century; al Jdida, 18th century; Hawānit Achoūr, 1756; Muntasiriyya, of Hafsid origin, 1437, restored in the Turkish period. There are the following zaouias: Sidi Ben Arons, 1434; Sidi al-Kalā'i, 1490; Sidi al Jalizi, 1496, with a square ground plan, surmounted by a tile roof, and with arcaded exterior decoration. Other monuments are: the tomb of the Banu Khorasan, 1093; the tomb of Qara Mustafa, 1718, with a façade divided by three arches and flanked by corner columns; Turbet al Bey, tomb of the Husseinites, 1782; Dār el-Bey, 18th century, palace of the Bey of Tunis; Dār Hussein, 18th century; Palace of the Bardo, of Hafsid origin, enlarged and remodeled in the 18th and 19th centuries.

Some of the soaks date from the 13th and 14th centuries (soak of the perfumers and soak of textiles). The Alaoui Museum in the Bardo Palace, 2 1/2 miles from Tunis, specializes in prehistory, ancient art, and Islamic art. Dār 'Abdallah contains modern Islamic art (19th cent.); Dār 'Othmān (17th cent.) ancient Islamic art; Dār el-Monastiri (18th cent.) Islamic art of Tunis and its environs.

The European city has risen quite separately in checkerboard fashion between the cape and the well-preserved native city. A canal, built at the end of the century, has created a port in addition to that of La Goulette. Following the recent studies toward a city plan and the formation of associations for joint action, residential zones — Mutuelleville, Megrine-Rades — and satellite towns have grown up around Tunis with the collaboration of excellent architects (e.g., P. A. Emery). The city has been enriched by noteworthy facilities: an artificial beach, a cancer center (L. Even, architect), a hippodrome, and an extensive hospital group (Zehrfuss, architect).

BIBLIOG. L. Poinasot, *Inscriptions chrétiennes de la région du Cap Bon*, B. Archéol. du Comité des travaux historiques et scientifiques, 1932-33, p. 769 ff.; C. de Chassignon, *Aperçu pittoresque de la Régence de Tunis*, Paris, 1949; A. Fikry, *La Mosquée Az Zaytouna à Tunis (recherches archéologiques)*, Egyptian Soc. of Historical Studies, II, Cairo, 1952, pp. 27-64; M. S. Zbiat, *Communication sur la mosquée az-Zaytouna de Tunis*, CRAI, 1953, pp. 143-452.

Utica (Lat., Utica; Gr., Ἰτύκη). The ruins are to be found in the "domaine de Bou Chateur" halfway between Tunis and Bizerte, 6 miles from the sea.

Situated near the mouth of the Medjerda (Bagradas), on the edge of two basins of the Mediterranean, Utica was a halfway point and stopping place on the Phoenician route west. According to the ancients it was founded in 1101 B.C.; it was, at any rate, a very ancient Phoenician colony, certainly earlier than Carthage, with which it always dealt as an ally rather than as a subject. It was overwhelmed by Agathokles in 310 B.C., remained faithful to Carthage throughout the First Punic War, but then passed into the hands of mercenaries. It resisted at the time of the Second Punic War, remaining faithful to Carthage, and underwent in 212 B.C. the raid of Otacilius and in 204-203 an unsuccessful assault by Scipio. It came to an understanding with Rome in 149; after the destruction of Carthage in 146, Utica remained free under a proconsul and became the capital of the province and the most important city in Africa, being close to the legionary camp. Supporting the popular party, it gave shelter to Marius and supported Caesar; Cato, who established the headquarters of the followers of Pompey in the town after expelling the inhabitants, killed himself there after the battle of Thapsus in 46 B.C. Octavian gave Utica Latin rights, but the reestablishment of Carthage took away from it not only the seat of the proconsul but also its first place among the cities of Africa. It became a colony under Hadrian. The silting-up of the port and the filling in of the bay caused the progressive decadence of the city. The martyrs of the Massa Candida underwent torture there in 258; it was an episcopal see in 258 and also in the Byzantine period.

There have come to light two Punic cemeteries with tombs dating from the 7th to the 5th centuries B.C., one located at the extremity of the ancient peninsula, the other on the little hill before it (in antiquity an island) which, according to some, was the original site of Utica. Of the Roman city there remain some cisterns and an aqueduct; noteworthy baths, under which there may be the remains of a Punic port; and a great villa decorated with mosaics. Some depressions may indicate the areas of the amphitheater and theater.

BIBLIOG. S. Gaell, *Histoire ancienne de l'Afrique du Nord*, Paris, 1913-28, passim; P. Cintas, *Deux campagnes de fouilles à Utique, Karthago*, II, 1951, pp. 5-88; P. Cintas, *Nouvelles recherches à Utique, Karthago*, V, 1954, p. 89 ff.

Zaghuan (perhaps the ancient Ziqua). Situated in the mountains of the "spine of Tunisia" some 35 miles south of Tunis in the neighborhood of the Zaghuan Wadi.

The identification of the city is uncertain. Most of the ruins are covered by modern constructions; of the ancient city itself all that remains is a monumental gate. But in the neighborhood are the beginning of an aqueduct which was built by Hadrian to supply Carthage after his visit of A.D. 128 and which, extended to Mount Djougar by Septimius Severus, eventually attained a length of about 44 miles. The source is decorated with a nymphaeum in a fair state of preservation; at the sides of a temple built in the form of a niche, which contained the statue of the *genius loci*, there extend two semi-circular colonnades, each with twelve intercolumniations. Between the Corinthian columns and the back wall, which was well built and decorated with niches, the porch is vaulted. The waters from the spring are collected in a pool in the form of two adjacent intersecting horseshoe arches, accessible from both sides by a stair.

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Zama, Jama (Gr. Ζάμα). Central Tunisia. The battle of Zama took place some distance from Zama itself, near Naraggara (not yet identified), probably in the plain of Siliana. The city was besieged by Metellus in 109 B.C. Juba I made it his residence; after the battle of Thapsus, the city took the side of Caesar. In 41-40 B.C. it was overcome by T. Sextius. An *oppidum liberum* under Augustus, it then became a colony by the name of Hadriana Augusta. Bishops are mentioned in 256 and in 411.

The problem of the identification of the site of Zama Regia is complicated by the existence of another city of the same name; in fact, the texts mention Zama Regia and Zama Major, from which one may assume either that the two epithets refer to the same city, and postulate the existence of a Zama Minor, or that they served to distinguish two separate communities.

In the village of Jama, located on the north point of the Massouges Mountains, there has been found an inscription with a dedication of the "Colonia Augusta Zama M...o." The emendation "Major" seems the most probable. Against the identification with Zama Regia two factors have been cited. The first is a passage from Sallust's *Bellum Iugurthinum* (57, 1): "oppidum in campo situs, magis opere quam natura munitum" ("the town is located in the open

country and is fortified more by the works of man than by those of nature"). The access to Jama is in fact made difficult by the presence of three deep gorges, but since antiquity the process of erosion has progressed to a considerable degree in this region of Africa, and these gorges may have been much shallower in Sallust's time. The Peutinger Map places Zama on the itinerary Assuras (Zanfou) Uzappa (Ksour-Abd-el-Melek); but the indications of this document are difficult to interpret, since none of the three intermediary stations (Seggo, Avula, and Autipsida) between Zama and Uzappa has been identified.

At Jama there are a great round megalithic monument, a nymphaeum erected on the site of a spring, two aqueducts and monumental tripartite cisterns, baths, various private reservoirs, and a Byzantine fortress. At Kaar Toul Zammel, about 6 miles from Zama, near the hill that divides the massif of the Massougues from the plateau of Mactar and unites the plain of the Sers with that of the Siliana, are the ruins of the Vicus Maracitanus, attributed to Zama Regia. The remains are a temple dedicated "[IOVI O.M.L. SEPTIMIO SEVE]RO AUG. TUNONI REGINAE IULIAE DOMN[AE...]" a square, a street, a Christian basilica, and a mausoleum. On a hill half a mile away are the Kbor Klib, a monumental altar probably dating from the 1st century B.C., decorated with a frieze of trophies and shields; a sanctuary with an altar where terra-cotta statuettes were found; and votive steles to Saturn.

BIBLIOG. L. Deroche, *Mél.* LX, 1948, p. 55 ff. (bibliog.). *For Kbor Klib*: G. C. Picard, *Monde de Carthage*, Paris, 1955, p. 72, pl. 72.

Zanfou (Assuras). Central Tunisia. The inhabitants of Assuras were legally peregrines. The city was transformed at the time of Augustus into an *oppidum civium Romanorum*, became the Colonia Iulia probably early in the reign of Tiberius, and was enrolled in the Tribus Moratia. It was an episcopal see in the years 256, 393, 397, 411, 418, 424, and at the beginning of the 7th century. The name of Assuras survives in that of Bled es-Sers, one of the internal basins of the Upper Tell, situated between the plateau of Mactar and the Massougues. The modern village of Sers is a few miles north. The ruins of Assuras, unexcavated at the mid-20th century, are among the most important of Tunisia. Three city gates and some triumphal arches with single openings, one of which was dedicated in A.D. 213, have been preserved. In the center of the city is a Corinthian temple, tetrastyle and pseudoperipteral, placed on a stylobate; two walls of the cella, surmounted by a frieze of bucrania and garlands, are intact. The theater was not carved out of the side of a hill but is a completely isolated structure. The river was lined with quays. There exist also two mausoleums and two Byzantine forts.

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ALGERIA. Prehistoric centers. The most numerous and important group of petroglyphs, excluding paintings, is distributed along the Little Atlas; it is conveniently designated as "Algerian," "South Oranian," or "of the Maghrib." In several of the places in which petroglyphs were discovered, R. Vaufray has found Neolithic remains in the Capsian tradition which furnish indications of the chronology of rock art.

Along the Saharan Atlas, petroglyphic stations are distributed from southwest to northeast, beginning near the Figuig Mountains in the extreme southeast corner of Morocco and occurring with the greatest frequency in Algeria, near Djebel Ksour and Djebel Amour, where the most numerous and important centers are located, as far as the territory of Djelfa. Zoomorphic representations, both realistic and symbolic, predominate everywhere, whereas representations of human beings are relatively rare and appear only at Moghar Tahtani and at Tiout (Ksour Mountains).

Among the most notable animal subjects are two heads of rams surmounted by a disk — a scheme typical of North African art — one found at Zenaga (Figuig Mountains) and the other at Bou Alam (Djebel Amour); two buffaloes fighting, found at El Hamra near Enfouss (Djebel Amour); and an elephant defending her young against a panther, found at Ain Safsaf, again near Djebel Amour. Besides these localities, petroglyphs have also been found at Djattou (Figuig Mountains); at Daia Mouchegeug, Gare el Taleb, Gare el Mahisserat, and Beut Saloul in the Ksour Mountains; at Fedjet el Keil (Cada el Kharrouba) in the Djebel Amour; at Ksar Zaonar and Dajet es Stel near Djelfa.

In northern Algeria, between Constantine and the Tunisian frontier, the most famous group of finds is that of Kef el Mascara, including a notable group of lions devouring a boar.

Petroglyphic stations are more numerous in southern Algeria, occurring with some frequency in the Djebel Safsaf, south of Tébesa, and in the mountains of Nemencha, where fine figures of *Bubalus*

antiquus have been found in grottoes at Kellous and nearby. In the basin of the Wadi Djedi, near Ouled-Djellal, south of Biskra, petroglyphs have been found in the grottoes of Chaba Naïma.

In the Tassili, a part of which extends beyond the Libyan border in the territory of Chad, the most numerous group of engravings and especially paintings is localized to the south of Fort Polignac, along the Wadi Djerat and other wadis. There appear human figures and animals, including types of fauna that have disappeared from the zone; in addition, the figurations have characteristics that make it possible to distinguish two different periods or styles of artistic production, the one created by hunting peoples, the other by a later pastoral society. These paintings, which are also well preserved, provide some of the richest and most varied examples of Saharan pictorial art. On the northeast slope of the Tassili, in Libyan territory, painted figurations have been found near the In Elegghi and Tachisset wadis and in the grotto of In Ezzane, and engravings of animal outlines, archaic in technique, appear on the heights of Arrechin.

In several places in the mountains of the Tedefest, engravings and rock paintings have been found, the former especially in the basin of Mertoutek, as far as the Wadi Timedouin and near the Wadis Dehin and Timelaine, with representations of animals singly or in groups, groups of human figures, and scenes of elephant hunts. Figurings from the age before the introduction of camels appear, along with others of the Libyan-Berber period.

At Tit, near Abélessa, on the southeast slope of the Ahaggar, H. Lhote discovered an interesting group of paintings representing men and animals according to the bitriangular scheme, referable to a period before the introduction of the horse into the Sahara.

Lhote's recent explorations in the mountains of the Djamel plateau have revealed an important series of petroglyphs, the most remarkable and interesting group of prehistoric North Africa. They show a succession of styles distributed chronologically over several millenia, from the period of the so-called "round-faced" hunting peoples (presenting many analogies with central Africa), to the beginning of Egyptian influence and the period of the introduction of the horse and camel.

Historical centers. Achir. This city, now in ruins, was the first capital of the Zanahja Zirids. In fact, there exist two cities, one built by Zirir about 1145 and known by the present name of Achir, the other built by Zirir's son and successor, Bulukkin, about 1173 and now known as Benia. Excavations have uncovered the foundations of the palace of Zirir. The plan shows a vast construction 131 × 236 ft. formed by a series of buildings arranged around a large colonnaded courtyard and by four other minor courts, two on each side of the main court. A protruding structure forms the entrance, and the various rooms project on the outside of the wall; the hall of honor is composed of a cruciform room preceded by an anteroom.

These characteristics permit interesting comparisons with the palaces of the Abbassides and of the Ommiads of Syria. On the ground can be seen the remains of some of the bastions of the primitive Achir, the line of the walls of Benia, and the foundations of the mosque. There are many fragments of ceramics.

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Ain bou Dris. Byzantine citadel.

Ain el Bordj (Tigisis). Bastions of the Byzantine period, 623 × 712 ft. and from 7½ to about 8 ft. thick.

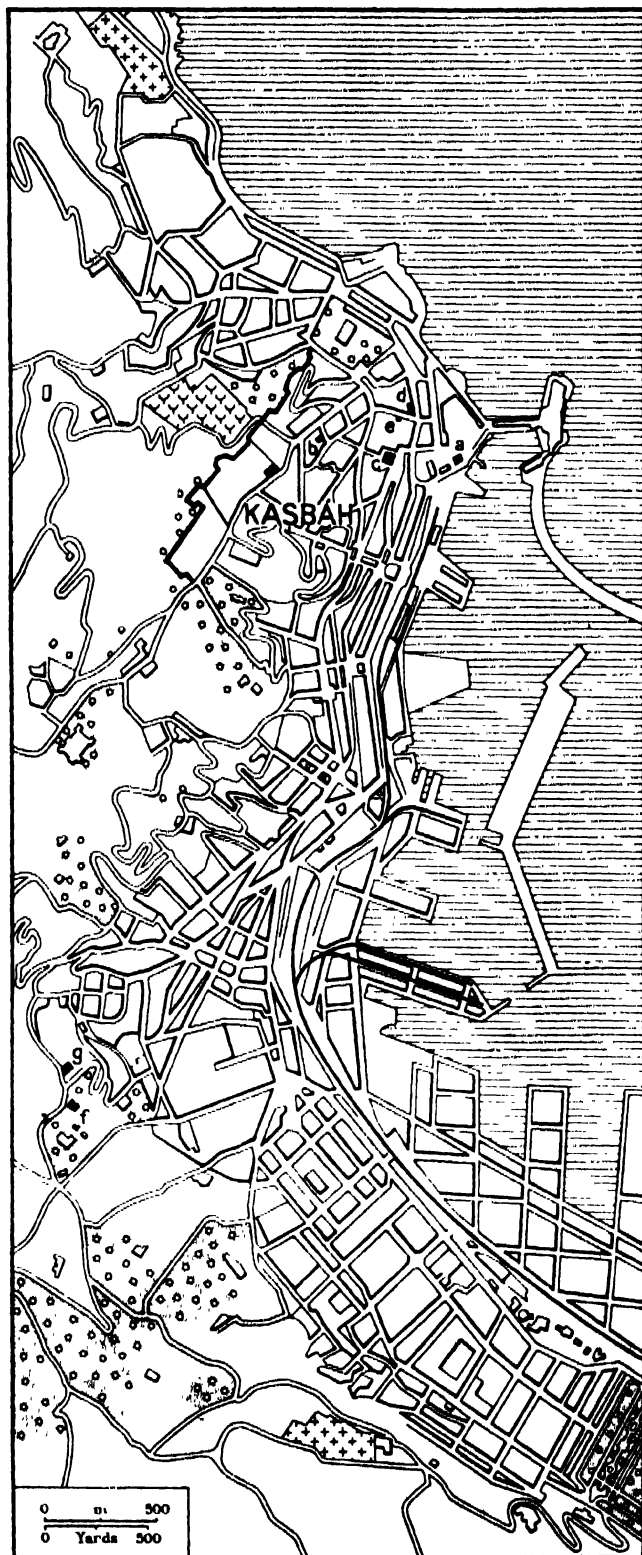
Algiers (Punic, Ikosim; Icosium; El Djezaïr [the islands]). Maritime city, capital of the Department of Alger. Traces of prehistoric settlements in the vicinity of the city to the west belong to the Mousterian, Aderian, and Neolithic periods. It was a Punic port called Ikosim, a Phoenician name that may have meant island of the thorns, of the owls, or of the seabirds. The Roman occupation of the city probably took place in the last third of the 1st century B.C. From 25 B.C. to A.D. 40, under the reigns of Juba II and of Ptolemy of Mauretania, the Roman citizens were associated administratively with the Spanish colony of Illici (Elche). Icosium became a Latin colony under Vespasian; it was overcome and burned by the rebel Firmus in 371. It became an episcopal see in Christian times.

No ancient remains are visible in the modern city. The plan of the Roman city is uncertain. Occasional discoveries and summary excavations carried on in the 19th century brought to light undatable traces of the city walls and remains of paved streets, mosaics, and water pipes. In addition, a head of Hadrian and fragments of statues as well as many Roman tombs with glass cinerary urns have been found. The objects were placed in the Musée Stéphane Gsell.

The Great Mosque of Algiers has a rectangular plan 108 × 148 ft. and consists of a sanctuary preceding and flanking a small interior

court. It has a much wider central nave, ten aisles, and five bays divided into three groups of two rows of arcades with lobed arches. The mihrab is at the end of the central nave.

It is noteworthy that, unlike the mosques of Ifrikiya, the Great Mosque of Algiers is covered by a double-pitched tile roof of the type characteristic of all the religious buildings of Almoravid or Almohad type. The Mosque of Sidi Ramdān, built by the Almoravids,



Algiers. Sections and monuments: (a) Great Mosque; (b) Mosque of Sidi Ramdān; (c) Cathedral, formerly Mosque of the Kechāwa; (d) Notre-Dame des Victoires, formerly Mosque of Ali Bitchnīn; (e) Dār Bakri Palace; (f) Bardo Palace; (g) Musée Stéphane Gsell.

is somewhat older than the Great Mosque. The Mosque of the Pêcherie was built in 1660, in the Turkish period. The Mosque of Ali Bitchnīn, built about 1662 (Turkish period), has been transformed into the church of Notre-Dame des Victoires. The Mosque of the Kechāwa, built in 1794, Turkish period, is now the Cathedral of St. Philip. The Mosque of the Kasba, built about 1818, at the end of the Turkish period, is now the Church of the Holy Cross. The Mosque called Jami Safir was built in 1534 and entirely reconstructed in 1826, at the end of the Turkish period. The funeral mosque of 'Abd er-Rahmān al-Tha 'alibi contains the mausoleum of the sage and mystic 'Abd er-Rahmān, who lived at the end of the 14th century and the beginning of the 15th; it was built in 1611, during the Turkish period. The funeral mosque of Sidi Muhammad Bū Qubrin, in the cemetery of the Hamma, was built in 1792. The Kasba, or fortified area, dates from the Turkish period. Of the Palace of the Jenina, nothing remains but the building called Dar Aziza, now the residence of the archbishop. The Palace of Mustafa Pasha, a fine complex of princely palaces of the Turkish period, is now the National Library. The Palace of the Bardo contains an ethnographic museum displaying Saharan weaving and a variety of products of Berber art. The Palace of Dār Bakri is a fine Turkish residence now given over to a permanent exposition of Algerian art: rugs, textiles, embroideries, leatherwork, copper, wood carvings, jewelry, wickerwork, and mats. The Musée Stéphane Gsell contains a section on Islamic art with a representative collection of art of the Maghrib and many objects of Algerian popular art.

Beyond the bastioned walls of the native city, the modern city developed extensively, independently of the old, between 1830 and 1845 and following 1920. To regularize construction, the architect Le Corbusier was called in to prepare a city plan (1931). Today Algiers has the character of a crowded metropolitan city. Noteworthy are the administrative area, the elaborate university buildings, and the self-sufficient modern quarters, as well as public buildings (the finance building) and an airport. Such famous architects as Emery and Le Corbusier participated in this work. There are several museums, including the Musée National des Beaux-Arts and the Musée Franchet-d'Esperey, located in the old Palace of the Bey, which has been restored.

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Announa (Thibilia). Department of Constantine, 14½ miles southwest of Guelma (Calama), near the road which, in ancient times as well as today, links this city with Constantine (Cirta). Built on a plateau, Thibilia occupied an excellent defensive position. The springs and arable lands of the surroundings had attracted inhabitants even before the Roman period. At the beginning of the empire it was a pagus of the territory of Cirta, administrated by two magistrates (CIL, VIII, 18843), for whom duumvirs were substituted about 268 (CIL, VIII, 18842). The first inscription that mentions the municipality of Thibilia (CIL, VIII, 22276), is from the time of Diocletian (284-305).

Excavations have brought to light a small forum and a network of streets; the three principal streets are paved and connect the gates situated to the south and to the east with a double arch near the forum. The luxurious residence of the Antiatii, a notable family of Announa of the time of Marcus Aurelius, has also been uncovered.

In the Byzantine period the major part of the city must have been abandoned, but strong bastions surrounded the ancient capitol, which later became a Christian church with a baptistery. To the southwest was another Christian church, with a nave, two aisles, and an apse; its façade is still standing. Half the city remains to be excavated.

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Baghāi. Fortifications of the Byzantine period, 1,082 × 1,010 ft. with walls about 7 to 8 ft. thick in the curtain walls and 5½ to 6½ ft. thick at the towers. The towers are 85 ft. on each side.

Belezma Plain. Byzantine fortress 367 × 410 ft. with square corner towers.

Bōne (about a mile northwest from the ancient Ippona, Ippone [Ἰππῶν. Hippo Regius]). Department of Constantine. Hippo Regius

formed part of Proconsular Africa and is situated at the end of the Gulf of Bone, at the foot of Djebel Edough, in an area between the mouths of two rivers, the Seibouse and the Boudjimak.

Ippona was in origin a Libyan-Phoenician port unique in Algeria for its excellent anchorage and favored by the fertility of the hinterland, which is rich in prehistoric remains. Already prosperous during the Punic period, the city became one of the most flourishing of the independent kingdoms of Numidia after the fall of Carthage (146 B.C.). After the defeat (48 B.C.) of Juba I, an ally of Pompey, it became a Roman city and part of the province of Africa Nova. At first a municipality and then a colony, it was important for more than three centuries. Christianity gave it new prestige. Under the episcopate of St. Augustine it appeared, in the period of the decline of the Roman empire and the Vandal invasion, as the last bulwark of civilization against barbarism in this region. Genseric occupied it after a long siege, during which St. Augustine died (430), and made it his temporary capital. But the Vandal attacks ruined the country, and the Byzantine reconquest gave it no more than the appearance of prosperity. The Arab raids and the anarchic state of the countryside provoked the progressive decadence of Ippona, until the great invasion of the Hilalian Arabs, beginning in the 11th century, determined the complete ruin and abandonment of the city.

Excavation of the ruins of Ippona has brought to light an important network of paved streets; a magnificent forum dating from the 1st century; a theater of Hellenistic type, of the same period; vast *thermae*, the most important of which were dedicated to Septimius Severus during the reign of Caracalla, in which some noteworthy statues were found; two quarters with villas containing superb mosaics dating from the 1st to the 5th centuries; an impressive Christian complex formed of a great basilica with a nave and two aisles which, with the connecting chapels, the baptistery, and other buildings, can be identified with the Basilica of Peace with which St. Augustine's name is connected. Among the Islamic monuments is the Mosque of Sidi Bū Marwān, built in 1035 in the style of the Aghlabid mosques of the 9th century. In the modern city, noteworthy for its position and surroundings, is the Basilica of St. Augustine, end of 19th cent. It has been provided with new quarters as the result of the construction of a port. It has an archaeological museum.

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Bougie (Saldæ). Province of Mauretania Caesariensis, later Mauretania Sitifensis. Commune of Sétif. Maritime city 155 miles east of Algiers; an important natural port. In the surroundings are prehistoric remains belonging to the Mousterian, Ibero-Maurusian, and Neolithic periods. It was probably a Punic port, although the attribution of an entire monetary series to the city is questionable. It was the Colonia Iulia Augusta Salditana Legionis VII Immunis, a colony of veterans founded by Augustus between 27 and 25 B.C.; under Caracalla (212-17) it took the name of Antoniana. It was perhaps a port of call for the Mauretanian fleet. There was mention in the 3d century of an association of *iuvenes* which arose to oppose the attacks of the natives. It was a bishopric in the Christian period and was probably occupied in the Byzantine era.

A few ruins, consisting of remains of fortifications, cisterns, and tombs, are visible in the modern city. Water was supplied by an aqueduct 13 miles long, built in the 2d century (CIL, VIII, 2728, 18112) and in part preserved. There are numerous bases of statues dedicated to emperors and eminent personages. Two similar mosaics, preserved in the city hall of Bougie and in the museum of Algiers, represent a head of Oceanus flanked by Nereids. Of the Islamic era there are only a few traces, from the Hammadid period, which was quite prosperous. However, remains of the fortifications of the 11th and 12th centuries are numerous, and the Saracen gate is of interest.

The regional museum contains, among other things, some richly ornamented and dated Hammadid tombs. The modern city is well developed, with a museum, a theater, and other recent buildings.

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Cap Matifou (Rusguniae, Temedfous). Department of Alger; a coastal town about 15 miles east of Algiers. Prehistoric traces remain. Little is known of the Punic port. It was a colony of Roman veterans founded by Octavian between 33 and 27 B.C.; a series of

milestones has revealed the complete name: "Col Iul Pontif Cl Rusg IIIIV Leg Gemell." The following interpretation for this name has been proposed: "Colonia Iulia pontificia clementia rusguniae nonae legionis gemellae." Accordingly, the colony may have been founded by a group of veterans that perhaps formed part of the army of the triumvir Lepidus. It took the name of Antoniana under Helio-gabalus (218-22). It was an episcopal see in the Christian period and was occupied in the 6th and 7th centuries by a Byzantine garrison.

Little is visible of the ruins of the Roman period. There have been found *thermae*, cisterns, tombs, a hundred or so votive steles dedicated to Saturn and, in the sea, many amphorae. In 1900 a Christian basilica was found which contained an important mosaic, now in the Musée Stéphane Gsell of Algiers, representing the vision of paradise of St. Perpetua. An inscription mentions the construction of a chapel destined to shelter a relic of the True Cross.

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Cherchel (Iol, Caesarea) Department of Alger. Maritime city 60 miles west of Algiers. The Punic port, Iol, is mentioned for the first time in the 4th century B.C. It was the capital of Bocchus, king of Mauretania; from 25 B.C. to A.D. 40 it was the capital of Juba II, who called it Caesarea, and of his son Ptolemy; and finally it became the capital of the Roman province of Mauretania Caesariensis. It was the base of the Libyan fleet and as a commercial port was second only to Carthage. Claudius gave it the rights of a colony. It was the native city of the emperor Macrinus (217-18). As an episcopal see it was visited by St. Augustine in 418. In 371 Firmus took the city and burned it; but it was restored after it fell into the hands of the Vandals in 429 and became the capital again after the Byzantine reconquest of 534. It was overcome by the Arabs in the 7th century.

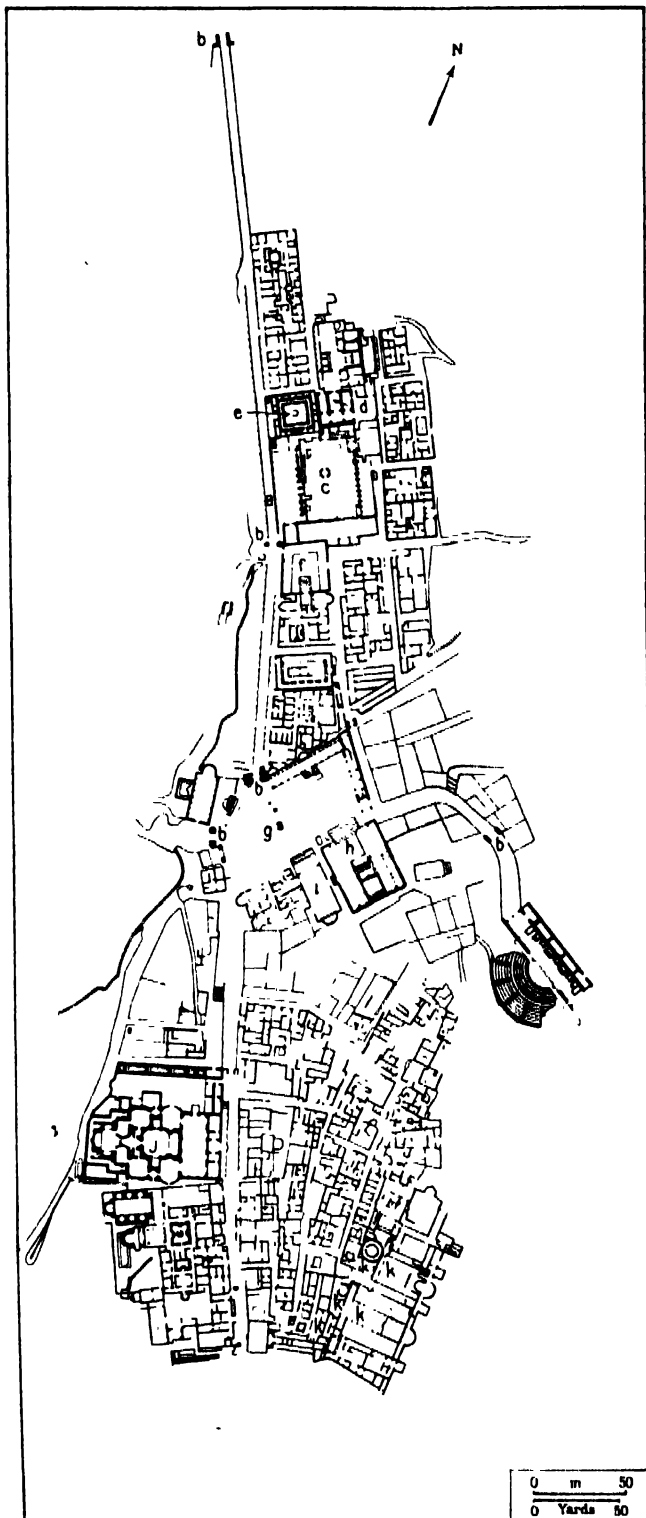
The city walls have a perimeter of about 4 1/2 miles. Many monuments were built under Juba II and in the Roman period. The excavations have uncovered an amphitheater, two large *thermae*, luxurious homes, vast reservoirs, two aqueducts, and three cemeteries. Also there have been found a notable number of statues and busts, among which are the Venus of Cherchel, now in the Musée Stéphane Gsell in Algiers; preserved in the Municipal Museum of Cherchel are the Athena with acanthus, the Apollo of Cherchel (identified with the Apollo Alexikakos of Kalamia), a head of Cleopatra VII, a cuirassed torso (Augustus?), busts of Hadrian, Domitia Lucilla, and others. Some of the numerous noteworthy mosaics represent work in the fields (Pl. 24), the legend of Achilles, the seasons, and the triumph of Bacchus.

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Constantine (Kīpra, Cirta, Constantina). Department of Constantine, on the Rhummel River. The locality was inhabited in prehistoric times; traces of human inhabitation have been found along the ancient shoreline of Mansura and in the Grottoes of the Pigeons, the Bears, and the Wild Sheep. It was occupied by the Phoenicians, who were responsible for the sanctuary of El-Hofra, where more than a thousand Punic steles were found; the sanctuary of Bellevue; that of the European cemetery; and numerous tombs on the hill of Bellevue-Condlat. The name of Cirta is mentioned both at Constantine and at Le Kef. Cirta Regia was the capital of the Kingdom of Numidia, and the Colonia Cirta, founded by P. Sittius, was the capital of the Confederation of the Four Colonies, which still existed in the middle of the 3d century. At the end of that century it became the capital of Numidia Cirtensis; later it was the capital of all Numidia, its name having been changed to Constantine by the Emperor Constantine when the city was rebuilt following its destruction under Domitian Alexander at the beginning of the 4th century.

There survive remains of the bridges over the Rhummel and of the aqueduct that channeled the water of the Bou Merzoug. In the Kasba several large reservoirs are still in use. Numerous inscriptions are preserved in the Kasba, in the Place de la République, and in the museum. A Victory in bronze from the capital of Cirta is to be found in the Musée Gustave-Mercier. Beneath the Esplanade Leclerc important remains of a large monumental complex from the end of the 4th century can be seen. From the Byzantine period there remain only parts of the city walls; however, there are many monuments from the Islamic period. The Great Mosque is of uncertain date but later than the 8th century. The Mosque of Souk al-Ghazal was built in 1730 (Turkish period) and later used as a cathedral. The Mosque of Sidi Lakhdar was built in 1743 (Turkish

period; that of Sâlaï Bey, called Jami Sidi al-Kittâni, in 1776 (Turkish period). The madrasah of Sidi Lakhdar was finished in 1779 (Turkish period), that of Sidi al-Kittâni about 1775 (Turkish period). The Palace of Hadj-Ahmed was built between 1826 and 1835. The house with the projecting upper story in the Islamic city is of interest. There is a permanent exhibition of the arts of east Algeria, displaying carpets, decorative textiles, weaving of the nomads, embroideries of Bône, modeled pottery, copper objects, baskets, jewelry, wood



Cuicul (Djemila). Sections and monuments: (a) *Cardo maximus*; (b) gates and arches; (b') Arch of Caracalla; (c) north forum; (d) Capitol; (e) Market of Cosinius; (f) Temple of Venus Genetrix; (g) Severan Forum; (h) Temple of the gens Septimia; (i) Basilica; (j) great baths; (k) Christian structures (basilicas, chapel, baptistery, episcopal residence).

sculpture, and mats. The Musée Mercier contains valuable collections of Islamic art, especially objects from Kalaa des Beni Ham-mâd, Bougie, and Tiddis. The modern city has an irregular plan, being situated on the edge of a rocky plateau, with bridges over the canyons, such as that of Sidi Rached and the suspension bridge of Sidi Mecid. Philippeville serves as its port; it has straight streets and a small museum.

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Djemila (Cuicul). Commune of Sétif, Department of Constantine, on a tributary of the Wadi El Kebir. Berber in origin, as its name indicates, Djemila was a military colony founded in Numidia, probably under Nerva in A.D. 96 or 97, at the crossing of two roads; one connecting the coast with the fertile highlands passing through the mountains of the Little Kabylia, and the other running from Numidia to Mauretania. The city, a military and administrative center, was enriched by the flourishing of commerce and agriculture; in the 2d and 3d centuries it expanded beyond its encircling walls with the construction of new quarters on the south side. It was an episcopal see from the 3d century on, was divided by the Donatist schism in the 4th century, and was reunified at the beginning of the 5th century through the offices of the bishop Cresconius. It survived the conquest of the Vandals and the Byzantine reconquest.

Around the 2d-century forum are the remains of a secular basilica, the curia, and the capitol, in addition to the market of Cosinius and the small Temple of Venus Genetrix, both in a good state of preservation. In the new forum there are a portico, the Arch of Caracalla (216), the fine temple consecrated to the gens Septimia (229), a judiciary basilica, and a 4th-century market for fabrics. In the southern quarter are the theater (161), built against a hillside; the great baths (183), quite well preserved; three churches of the 4th and 5th centuries; and the very beautiful 4th-century baptistery, of which only the vaults have been restored. In the museum are various mosaic pavements from pagan and Christian monuments and from private homes, and important inscriptions, some of them dedications of monuments and others connected with the cults of Bacchus, Hercules, and Saturn.

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El Kantara (Ad Calceum Herculis). Commune of Batna, Province of Numidia. The name Calceus Herculis alludes to a myth, not confirmed by literary sources, which attributed to the hero the opening of the narrow canyon by which the Wadi El Hai, descending from the highlands and crossed by a bold, single-arched Roman bridge, makes its way to the desert as far as the place where the palm gardens of El Kantara extend today. At Calceus Herculis was established a small center of Roman colonization which had an embryonic municipal organization and which cultivated olive groves as a result of a notable system of irrigation. It was located at a junction on strategic roads in the network of the limes of Numidia and developed progressively from the time of Trajan to that of Gordian III; it was the base of a garrison formed especially of Syrian archers. Following the time of Commodus, the sixth Commagenian cohort was stationed there, and after the time of Septimius Severus, two Syrian companies. Sculptures and inscriptions attest to the Semitic character of this garrison and to the cults of the gods Malakbel of Palmyra and Sol of Emesa.

The ancient town must have been on the edge of the present oasis; at mid-20th century no monuments had been excavated; however, many remains of the Roman period — architectural fragments, sculptures, and inscriptions — are preserved in the small Musée Gaston de Vulpillière.

BIBLIOG. J. Carcopino, *Le Limes de Numidie et sa garde syrienne*, Syria, VI, 1925, pp. 30-37, 118-40; E. Albertini, *Inscriptions d'el-Kantara et de la région*, Rev. Africaine, LXXII, 1931, pp. 193-261; H. L. Marrou, *La Collection Gaston de Vulpillière à El-Kantara*, Mém. L, 1933, pp. 42-86; J. Baradez, *Fossatum Africae, Recherches aériennes sur l'organisation des confins sahariens à l'époque romaine*, Paris, 1940, pp. 199-201, 229-34.

Fossala. A Byzantine castle.

Kalaa Sidi Yahya. Byzantine enclosure 164 × 476 ft.

Gastal. Byzantine fort 156 × 177 ft. with a round tower at each corner and a square tower in the middle of one side. Traces of constructions in the interior.

Gemellae. Called El Kaabat today, the locality corresponds to a part of the Roman encampment; it is located 18½ miles southwest of Biakra.

The encampment was first occupied by the first Chalcidian cohort (126) then it was a camp of the third Augustan legion (131-2) and its auxiliary troops (the first Pannonian wing and the first Thracian wing). When the third legion was dissolved by Gordian for disciplinary reasons, the Pannonians remained alone. The encampment was occupied by a detachment of the third legion after the victory of Valerian and Gallienus (253). It was the residence of the Praepositus Limitis Gemellensis (*Notitia Dignitatum*, Oc., 25, 6, 24); it was probably already the seat of command of the whole sector of the limes, bounded by the defense line, the *fossatum Africae* 3 miles south, which probably dates from the time of Hadrian. Gemellae is the classic example of the legionary camp, with a vallum from the period of Hadrian. A thick stratum of sand has protected the remains of a *praetorium* with an armamentarium, a chapel of the insignia, a triple portico around the military altar placed in the center, and bases of statues set up by the emperors. The city developed around the legionary camp. It was protected by a city wall with a perimeter of over a mile and a quarter, in which four gates have been discovered. There is an amphitheater, three small temples, one of which was consecrated to the Dii Campestres; baths; an aqueduct; a cemetery with cremation tombs in which the ashes were enclosed in busts; and a dock in the Wadi Djeni, marked by two small obelisks.

BIBLIOG. J. Barades, *Gemellae*, Rev. Africaine, XCIII, 1940, p. 5 ff.; J. Barades, *Fossatum Africae*, Recherches sérieuses sur l'organisation des confins sahariens à l'époque romaine, Paris, 1949.

Gouraya (Gunugu). Department of Alger, near the Marabout of Sidi Brahîm. In the surroundings are prehistoric layers with Aderian and Neolithic artifacts. It was a Punic establishment notable for the presence of three cemeteries with underground chamber tombs, the oldest dating from the 4th century B.C.; some were in use up until the imperial period. The city, partially populated by Libyans, had commercial relations with the Iberian peninsula and issued its own coinage with the Punic legend QNGN.

It was a colony founded by Augustus between 27 and 25 B.C. with recruits from a praetorian cohort. In the 2d century it became a flourishing city, and toward the end of the 3d it served as capital of the surrounding area, as proved by dedications dating from 297. In the 10th century the city was confined within a relatively small area surrounded by walls built by the Berbers with Roman materials and took the name of Break.

The pit tombs are the most westerly ones on the Algerian coast; in general they consist of group graves, and burial was by both cremation and inhumation. The funeral furniture consists of amulets, masks, Punic pottery, bottles in the shape of wineskins, modeled vases, painted ostrich eggs, and Italiote ceramics of the 4th to the 1st centuries B.C. In addition, coins of Malacca, of the Mauretanian kings, of Constantine II, and of Magnus Decentius have been found.

The urban ruins, unexcavated at the mid-20th century, are the aqueduct, the reservoir, and the baths. Portraits of Lucius Verus and of Septimius Severus have been found. There is also a Christian chapel decorated with Ionic capitals. In the west wing of the port there are traces of foundations of a pier.

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Guelma (Calama). Commune of Bône. In the elevated area of the city numerous tombs have come to light, excavated in the tufa; several are of a Phoenician type. Calama was included in the part of Numidia administratively dependent on the province of Proconsular Africa. It was still a municipality under Caracalla, but it is mentioned as a colony in 283. Possidius, the biographer of St. Augustine, was bishop of Calama. Justinian's general, Solomon, had a fortress built there, of which considerable remains survive.

The theater, now excessively restored, was built through the munificence of a flamen, probably at the time of Septimius Severus; it is now used as a museum, and the monument of the Antietii, discovered in Announa, is preserved there. Some high walls of vast thermae are incorporated in the Byzantine citadel. One of the numerous ancient cisterns, a Roman one located behind the tribunal, is still in use. There are Christian inscriptions referring to relics placed beneath an altar. The city park contains an important collection of Latin inscriptions.

The city walls of the Byzantine period, 715 × 912 ft., remain, with a sentry corridor supported by arches; the wall is 10 ft. thick and had 13 square towers.

BIBLIOG. S. Gaell, *Atlas archéologique de l'Algérie*, Algiers, Paris, 1911, fasc. 9, no. 146.

Henchir Guessea. Byzantine fort 1,161 × 1,476 ft., with square towers and one or three round towers.

Henchir Tikubai. A church about 50 × 104 ft. preceded by a large square court.

Iomnium (perhaps modern Port-Gueydon). Commune of Tizi Ouzou. Coastal city of Mauretania Caesariensis, mentioned in the ancient itineraries and in inscriptions (CIL, VIII, 20716) as 18 or 20 Roman miles to the east of Rusucurru (Tigzirt, see below), it was long identified with the ruins of Tigzirt but is actually between Mleta and Azeffoun, in the region of Port-Gueydon.

There are notable remains at Port-Gueydon. On the seashore is a large building with mosaics; on the heights an aqueduct, numerous ruins not clearly identified, traces of a city wall, and baths. A very fine sarcophagus found at Port-Gueydon is now in Algiers.

BIBLIOG. S. Gaell, *Atlas archéologique de l'Algérie*, Algiers, Paris, 1911, fasc. 6, nos. 70, 71, 87; E. Fréaule, A. Hus, *L'identification des villes de la côte Kabile*, Mélanges, LXVI, 1954, pp. 147-63.

Kalaa (Qal'a) des Beni Hammâd. Excavations have brought to light the palace of al-Bahr and parts of those of al-Manâr and Salut.

Among the imposing remains of the palace of al-Manâr are an enormous tower, articulated on the exterior by vertical semicylindrical niches, dominating the canyon of the Wadi Fraj and permitting surveillance of the only access to the city.

The al-Bahr palace was 525 × 853 ft., in the lower part there was a pool 164 × 230 ft. surrounded by porticoes and various rooms, many of which form separate buildings similar to those of the palace of Ziri at Achir. Even the projecting entrance suggests the hall of honor of the palace of Ziri. Excavation has revealed the upper part of a fortified complex, with a projecting entrance and various rooms, one of which constitutes an isolated structure, later subdivided around a court. There is also a variety of rooms in the lower part.

The palace of Salut, which was about as extensive as the al-Bahr palace, and, however, have been less ambitiously decorated.

A minaret and the outline of the walls, which permit the reconstruction of the plan, are all that survive of the Mosque of Kalaa. The plan is rectangular (184 × 210 ft.). The sanctuary has a nave and 12 aisles that are 8 bays deep, formed by the alignment of stone columns which support highly stylized capitals in which the suggestion of a classic acanthus is present; the *qibla* is protected by a stone *maksoura*. The harmonious proportions of the minaret can be reconstructed from the surviving remains. The tower, 82 ft. high, has recesses on one side with remains of decoration in terra cotta.

BIBLIOG. P. Blanchet, *La Kalaa des Beni-Hammad CRAI*, Sept., 1899; L. Beylié, *La Kalaa des Beni-Hammad, une capitale Berbère de l'Afrique du Nord au XI^e siècle*, Paris, 1909; A. Robert, *La Kalaa des Beni-Hammad*, Rec. des N. et Mém. de la Soc. archéol. de Constantine, 1910, p. 93 ff.; G. Marçais, *Les poteries et les faïences de la Qal'a des B. Hammad*, Constantine, Braham, 1916; L. Golvin, *Notes sur quelques débris de plâtre trouvés à la Qal'a des B. Hammad*, Mélanges, Algiers, 1937; P. Blanchet, *Description des monuments de la Kalaa des Beni-Hammad*, avec notes de H. Saladin, *Nouvelles Archives des Missions Scientifiques*, XVII.

Khamissa (Thubursicum Numidarum). Commune of Bône; 23 miles southwest of Souk-Ahras. An *oppidum* of Proconsular Africa, attacked under Tiberius by the rebel Tacfarinas. It was a small Berber-Roman city — a *civitas* in A.D. 100, a municipality under Trajan, and perhaps a colony in 270. Numerous inscriptions found in the locality mention municipal magistrates and local priests. The city was an episcopal see and was occupied by the Byzantines.

Khamissa had a notable monumental development in the 2d and 3d centuries; there remain two forums, an old and a new, dated by the inscriptions on the arches from the time of Septimius Severus; the capitol, in which was found a statue of Jupiter, now in the Guelma museum; the curia; a vast secular basilica; several baths; a fine theater, apparently unfinished, with the auditorium intact; houses with mosaics (one of these, representing the triumph of Amphitrite, is now in the Guelma museum); several temples, notably a vast sacred complex with basins, a porticoed court, and a sanctuary in which statues of Pluto and Diana and a head of Bacchus were found; a Christian basilica; and a Byzantine fort.

In the museum there are votive steles dedicated to Saturn and various statues, including one of Lucius Verus. A colossal head of Minerva is kept in the Musée Stéphane Gaell in Algiers. The city walls, 116 × 279 ft., are Byzantine.

BIBLIOG. S. Gaell, *Atlas archéologique de l'Algérie*, Algiers, Paris, 1911, fasc. 18, no. 297; S. Gaell, *Khamissa, Mdaorouch, Announa, I, Khamissa*, Paris, Algiers, 1914.

Ksar Sbahi (Gadiaufala). Byzantine fortress 154 × 144 ft. built about A.D. 540 by Solomon. Rectangular towers on the corners and a fifth on one of the sides.

Laghouat. Regional exhibition of Algerian art for the display of decorated textiles of Laghouat and of the Mزاب, weaving of the nomads, copperwork, jewelry, and baskets.

Lambèse (Lambaesis). Commune of Batna, about 7 miles from the tower of Batna; situated at the foot of the Aurès Mountains. Lambèse arose as the camp of the third Augustan legion. The first establishment dates from the time of Titus (A.D. 81); the second temporary encampment was established at the beginning of the 2d century; and the permanent one was built under Hadrian (A.D. 129). Lambèse subsequently became the military capital of Roman Africa and the see of the legate of the emperor; it was the capital of Numidia from the time of Septimius Severus until 320, when Constantine became the capital of Numidia Cirtensis and of Numidia Militaris Unitas. In the neighborhood of the camp a city developed which was a free community in the 2d century, a municipality by 197, and a colony in the late Roman era. It was an episcopal see and was occupied in the Byzantine period.

There are ruins of three military encampments. Of that of Hadrian there remain the *praetorium*, the chapel of the insignia, the scholae, the basilica, the barracks, and other structures. Nearby are the baths and amphitheater of the garrison. The city is extensive and includes the forum, the capitol with a double cella, a temple of Aesculapius and one of Salus with attached baths, a "sacred way" flanked by temples, a Mithraeum, and the temples of Africa and of Isis. The monumental gates are also preserved: the Timgad gate, the gate of Septimius Severus, and the gate of Verecunda (Markouna). There are also remains of a Byzantine fort.

The museum contains a notable collection of statues, mosaics, and inscriptions.

BIBLIOG. S. Gaell, *Atlas archéologique de l'Algérie*, Algiers, Paris, 1911, fasc. 27, nos. 222, 224; R. Cagnat, *L'Armée romaine d'Afrique*, 3d ed., Paris, 1912; L. Leschi, *Inscriptions latines de Lambèse et de Zana I. Un nouveau camp de Titus à Lambèse*, Libya, 1, 1953, pp. 189-97.

Lamoricière (Altava). In the Department of Oran, 20 miles east of Tlemcen, on the Wadi Isser. There are no prehistoric remains in the area and no definite traces of pre-Roman Berber settlement. Around 201 B.C. the locality was occupied by the Romans, who established a training garrison there. It developed rapidly: in 220 the city possessed a military company; in the 4th century it enjoyed relative prosperity in spite of its lack of security and the loosening of its ties with Rome; and in 349-50 the inhabitants built new fortifications. In 429 the Vandals probably passed through the city, which was already under the control of Berber tribes; in the 6th century Altava was the center of a Berber principate, and in 508 Masuna, "King of the Mauretians and of the Romans," built a castrum there. Inscriptions indicate that the city had close relations with Pomaria and Volubilis.

The ancient city was rectangular (1,040 × 1,314 ft.), covering an area whose center is now occupied by the railway station of Lamoricière, and surrounded by later walls, of which there are notable remains. A fortified redoubt 157 × 230 ft. has been found, as well as a thoroughfare, probably the *cardo maximus*, flanked by poor houses with badly built walls and crude pavements; constructions for industrial uses such as olive presses, ovens, and mills; and cemeteries.

BIBLIOG. S. Gaell, *Atlas archéologique de l'Algérie*, Algiers, Paris, 1911, fasc. 31, no. 68; L. Leschi, BAC, 1932-33, pp. 248-54; P. Courtot, *Essai historique sur Altava d'après l'épigraphie*, Rev. Africaine, LXXIX, 1936, pp. 401-29; P. Pauthier, *Évolution municipale d'Altava aux III^e et IV^e siècles ap. J.C.*, Mel, CXVIII, 1956, p. 207 ff.

Masqueray (Rapidum, Sour-Djouah). Department of Alger. Village situated in the interior of the region, 100 miles south of Algiers. It was an encampment founded by Hadrian in 122 (CIL, VIII, 20833) in the limes of Mauretania Caesariensis between Aumale (ancient Ausia) and Berrouaghia (ancient Thanaramusa Castra). It had a garrison made up in part of the second Sardinian cohort and a contingent of Thracians. Next to the camp a city grew up, which was walled after 167 (CIL, VIII, 20834, 20835). Destroyed by rebels in the 3d century, it was rebuilt under Diocletian and made a municipality (CIL, VIII, 20836). In the Christian period it was probably an episcopal see.

Within the camp are the *praetorium*, the quarters of the commander, the barracks, and the baths. The city, which is enclosed by a wall built of squared stone and supplied with three gates, was divided in the late antique period into three quarters. A temple (perhaps the capitol), some houses, numerous stables,

presses, and mills have been found. To the north and east extend cemeteries.

BIBLIOG. S. Gaell, *Atlas archéologique de l'Algérie*, Algiers, Paris, 1911, fasc. 14, no. 90; W. Seaton, *Le secteur de Rapidum sur le limes de Maurétanie Césarienne après les fouilles de 1927*, Mém. XLV, 1928, pp. 150-181; M. Leglay, *Reliefs, inscriptions et stèles de Rapidum*, Mém. LXIII, 1951, pp. 53-91.

Mdaourouch (Madauros or, more probably, Madauri[orum]). Commune of Souk-Ahras. Located in the part of Numidia which was governed by Proconsular Africa. An old Numidian settlement which, under Titus and Domitian, became a Roman colony of veterans, taking the official name of Colonia Flavia Augusta Veteranorum Madaurensium. It was the birthplace of Apuleius (b. ca. 125), and St. Augustine began his studies in its famous schools.

Of the city there remain a forum, almost square, surrounded by porticoes and built in various stages in the course of the 2d century; a theater, built at the beginning of the 3d century and restored at the end of the 4th, situated on a slope and set off by a strong semi-circular retaining wall; winter and summer baths; more than twenty olive presses; a secular basilica with a single nave, dating from the time of Alexander Severus and later transformed into a Christian church with a nave and two aisles; two Christian basilicas, one within the city with a single nave dating from the middle of the 5th century, the other a cemetery basilica with a nave and two aisles, dating from the 4th or 5th century. In 534-36, during the reign of Justinian, the Patrician Solomon had a magnificent Byzantine fortress built; its well-preserved ruins cover a part of the ancient forum and incorporate the theater.

BIBLIOG. S. Gaell, Khamissa, Mdaourouch, Annouas, Part II, Mdaourouch, Algiers, Paris, 1922; E. Albertini, *Une basilique à Mdaourouch*, BAC, 1925, pp. 283-92, 1927, pp. 188-93; E. Albertini, BAC, 1930-31, pp. 314-17.

Messaad (Castellum Dimmidi, 2/3 of a mile west of Messaad). Department of Alger. The locality was inhabited in the Neolithic period. The Libyan name Dimmidi survives in that of Demmed, the Arabic village that existed earlier than Messaad in a place 2 1/2 miles to the east. It was an outpost of the limes and was occupied in 198 by order of the legate of Numidia, Anicius Faustus, by cavalry of the third Augustan legion, the third Gallic legion, and the first Pannonian wing commanded by Flavius Superius. It was held by the legionaries and knights of Numerus Palmyrenorum till 238 and was evacuated when the third Augustan legion was dissolved.

The castle had an irregular line of walls, today dismantled to the foundations, with a single gate to the north, towers, and a porticulus. The rectangular barracks were placed symmetrically on either side of a north-south street; one of these buildings covered an underground storehouse. The praetorian temple enclosed in its basement a well dedicated to Apollo and Aesculapius. In front of the temple were steles that commemorated, on the 3d of May each year, the dedication to Jupiter of the *Ara Cerei*. In one of the barracks near the temple were found frescoes representing religious ceremonies in honor of the Palmyrene divinities.

BIBLIOG. G. C. Picard, *Castellum Dimmidi*, Algiers, Paris, 1947.

Mila (Mileu). Byzantine enclosing wall about 4,000 ft. in perimeter, with 14 towers.

Morsott. Byzantine church 52 × 123 ft.

Oran. A modern city founded by the French in 1813. In the mid-20th century, following the covering of the Rehi River, the city was extended and new Moslem quarters were built. It has a commercial center of European type. The Great Mosque dates from the end of the 18th century (Turkish period). The "Mosque of the Encampment" was built in 1799 (Turkish period). There is an exhibition of popular art of western Algeria, including rugs of the Djebel Amour and of Kalaa des Beni Rached, rugs from Tlemcen, decorated textiles of the Djebel Amour and of the Sahara (region of Adrar and Timimoun), weaving of the nomads, baskets, leather objects, jewelry, wrought plates, and brasswork. The Museum of Fine Arts has a rich ethnographic section containing valuable collections of Islamic art.

BIBLIOG. W. Marial, *La mosquée de Sidi Mohammed el Kebir à Oran*, B. de la Soc. de géographie d'Oran, XIII, 1939, p. 153 ff.

Orléansville (Castellum Tingitanum). Central city of the administrative district of the Department of Alger, in the valley of the Chélif. The modern city was built over the remains of the Roman city in 1853. The ruins, which came to light at this time, have disappeared. Baths containing a mosaic with hunting scenes, now

in the museum of Algiers, were found, as were reservoirs, irrigation canals, cisterns, and two churches. One of these was a basilica with a nave and four aisles, square piers, an apse, a counterapse, and galleries; it had a fine mosaic pavement decorated with geometric motifs which contained an inscription stating that the church was founded in 324. A funerary inscription found in the counterapse mentioned the bishop Reparatus, who died in 475. Several martyrs' chapels, among which was a memorial chapel to the Apostles Peter and Paul, were located outside the walls.

The modern city underwent planned reconstruction after the earthquake of 1954.

BIBLIOG. S. Gsell, *Atlas archéologique de l'Algérie*, Algiers, Paris, 1911, fasc. 12, no. 174; S. Gsell, *Monuments antiques de l'Algérie*, Paris, II, 1901, pp. 103, 236, 241; CIL, VIII, 9705-24; 21518-9; G. Vidal, *Un témoin d'une date célèbre. La basilique chrétienne d'Orléansville (324)*, Algiers, 1936; L. Leschi, *La basilique chrétienne en Algérie*, *Atti del IV Congresso Internazionale di Archeologia cristiana*, I, 1940, p. 149 ff.

Philippeville (Rusicadia, Rusicaddis, and Rusicade; Thapsus, Thapsa in Livy and in the *Periplus of the Pseudo-Scylax*). City and port in the Department of Constantine, near the Safsaf (ancient Thapsus) River.

It was a Phoenician site in the 4th and 3d centuries B.C. In 46 B.C. the territory was given to P. Sittius Nucerinus, who had taken part in the defeat of Juba. It became a Roman colony, at the latest under Trajan, and took the name of Colonia Veneria, which suggests Pompeii. It took part, along with Cirta, Mileu, and Cullu, in the Federation of the Four Colonies and had a judiciary prefect. The city had a privileged situation, even after the dissolution of the Federation in the 3d century, until its destruction by Genseric in 435. Under the Antonines it was a commercial city and a resort spot. Its port, directly connected with that of Stora 2½ miles to the west, was very important, since it constituted the main port of the region of Constantine. It had close contact with Italy (Puteoli), Gaul, and the East. In the 5th century a customs house is mentioned, and in the 3d, 4th, and 5th centuries it was an episcopal see. An inscription that may be Byzantine has been found.

The plan of the ancient city is not known. There survive a theater, about 270 ft. in diameter, built in the Hadrianic period and restored in the 3d century, port basins, huge cisterns, and inhumation and incineration cemeteries. Large architectural elements in white marble have also been found. On the coast there once were ruins of sumptuous villas and mausoleums. There exists also a Christian area. Numerous inscriptions, fine statues of Caracalla and Agrippina the Elder, decorated sarcophagi, and important remains of Oriental cults have been placed in the museum. There was a local school of sculpture using marble from the Filfila quarries 7½ miles away.

BIBLIOG. S. Gsell, *Atlas archéologique de l'Algérie*, Algiers, Paris, 1911, fasc. 8, no. 136; S. Gsell, *Musée de Philippeville*, Paris, 1898.

Port-Gueydon. See Iomnium.

Ras el-Oued (Thamallula). Byzantine fort 360 ft. on each side, with eight towers, four of which are at the corners.

Saint-Leu (Bettioua, Portus Magnus). Department of Oran, on the coast 25 miles east of Oran. A Phoenician site, it became a Roman port and city. Urban development took place within walls built on a steep cliff some distance from the sea. The following have been found: the forum, with porticoes; the curia; remains of two sanctuaries, one a temple within a court with porticoes and steps; houses built on terraces and connected by stairs; numerous cisterns; a cemetery, which has yielded fine vases in terra sigillata; a mosaic with a mythological subject. The principal monuments seem to go back to the 2d century. Inscriptions, mosaics, and ceramics are kept in the museum at Oran.

BIBLIOG. R. de la Blanchère, *Catalogue du Musée d'Oran*, Paris, 1893, passim; S. Gsell, *Monuments antiques de l'Algérie*, Paris, 1901, I, pp. 128, 233, 261, II, pp. 17, 19; CIL, VIII, 9753-80, 21605-23; S. Gsell, *Atlas archéologique de l'Algérie*, Algiers, Paris, 1911, fasc. 21, no. 5; M. M. Vincent, *Portus Magnus*, *Rev. Africaine*, LXXVII-LXXVIII, 1935-36, p. 35; M. M. Vincent, *Vase ibérique du cimetière Est de Portus Magnus*, *Libya*, I, 1953, pp. 13-20.

Sedrata (near Ouargla). Only ruins buried in the sands of the desert remain of the city founded about 908 by the Rustamids expelled from Tihert. However, parts of a vast complex of palaces and several interesting sculptures in gesso have been brought to light.

BIBLIOG. P. Blanchet, *Note sur les fouilles de Sedrata*, CRAI, ser. 4, VI, 1898, p. 520; M. van Berchem, *Deux campagnes de fouilles à Sedrata*, CRAI, 1952, p. 242 ff.

Sétif (Colonia Sitifis). Department of Constantine. It is situated at a road junction on a plateau separated from the sea by the Babor Mountains. This region has been inhabited from remotest times; cromlechs and Libyan inscriptions have been found. Caesar detached the region, which became the province of Mauretania Caesariensis (A.D. 40), from Numidia and incorporated into it the kingdom of Bocchus. It passed to his successor, Juba II. The frontier lay between Sétif and Cuicul (Djemila). A colony of veterans discharged by Nerva, it took the name of Colonia Nerviana Augusta Martialis Veteranorum Sitifensium. Its economic and strategic importance for the line of internal defense of Mauretania Caesariensis is documented by milestones dating from the period of the reorganization of the road network, which took place under the Severi. When Mauretania Caesariensis was divided into two provinces (288), Sétif became the leading city of Mauretania Sitifensis. Theodosius established his headquarters there during the war against the usurper Firmus (373-75). It was an episcopal see.

The principal monuments are concealed beneath the modern city; all that remains are the arcades of the theater, the thermae, and the basement and columns of the Temple of Diana. In the cemetery are ruins of four mausoleums, including those of the so-called "Mausoleum of Scipio"; in the neighborhood are ten open reservoirs arranged in two parallel rows and connected in pairs. The city has numerous churches and a Byzantine fortress 351 × 518 ft., built by Solomon about 540, with eleven square towers of which four are at the corners.

BIBLIOG. S. Gsell, *Atlas archéologique de l'Algérie*, Algiers, Paris, 1911, fasc. 16, no. 364; J. Carcopino, *Les castella de la plaine de Sétif*, *Rev. Africaine*, LIX, 1918, p. 5 ff.; L. Leschi, *Une excursion archéologique dans le Guergour*, B. de la Soc. historique et géographique de Sétif, II, 1941, p. 143.

Taoura (Thagura). Byzantine fortress 236 × 312 ft., with walls about 7 ft. thick.

Tébessa (Theveste). Department of Constantine, on the Wadi Zarour. Situated on the southern edge of the highlands, Tébessa was an important marketplace and road junction. It is the center of a region rich in prehistoric remains. The native city was powerful up to the time of the First Punic War. The camp of the third Augustan legion was temporarily located here after it had been at Ammoudara and before it was at Lambaesis. The city became a colony, perhaps at the time of Trajan, and was an episcopal see shortly after the council of Carthage in 256. Still in the hands of the Vandals in 508, it was destroyed by the natives and rebuilt by Solomon in 535; it became a Byzantine episcopate and was conquered by the Arabs in the last third of the 7th century. It retained a certain importance until the French occupation in 1851. There are four well-preserved monuments: a four-sided arch called the Gate of Caracalla, built in 214 and then incorporated into the Byzantine walls; a temple from the 3d century erroneously called the "temple of Minerva"; a basilica built in 385, with spacious connecting buildings and monastery, one of the largest basilicas in Africa after the Damascus el Karita in Carthage; and a city wall (918 × 1,050 ft.) built by Solomon and partly restored. There are many ruins less well preserved, including a large temple, an amphitheater, an aqueduct, houses, baths, cemeteries, and a great number of mosaics. The mosaics and other objects are displayed in a small museum. Tébessa is the center of a region quite rich in Roman remains — farms, olive mills, villages, churches, tombs, streets, bridges.

The Byzantine walls had 14 square towers 46 × 59 ft. high. Also from the Byzantine period is a chapel 29 × 31 ft. preceded by a portico with two columns and two pilasters. The remains of two other churches within the Byzantine walls are covered by the modern city.

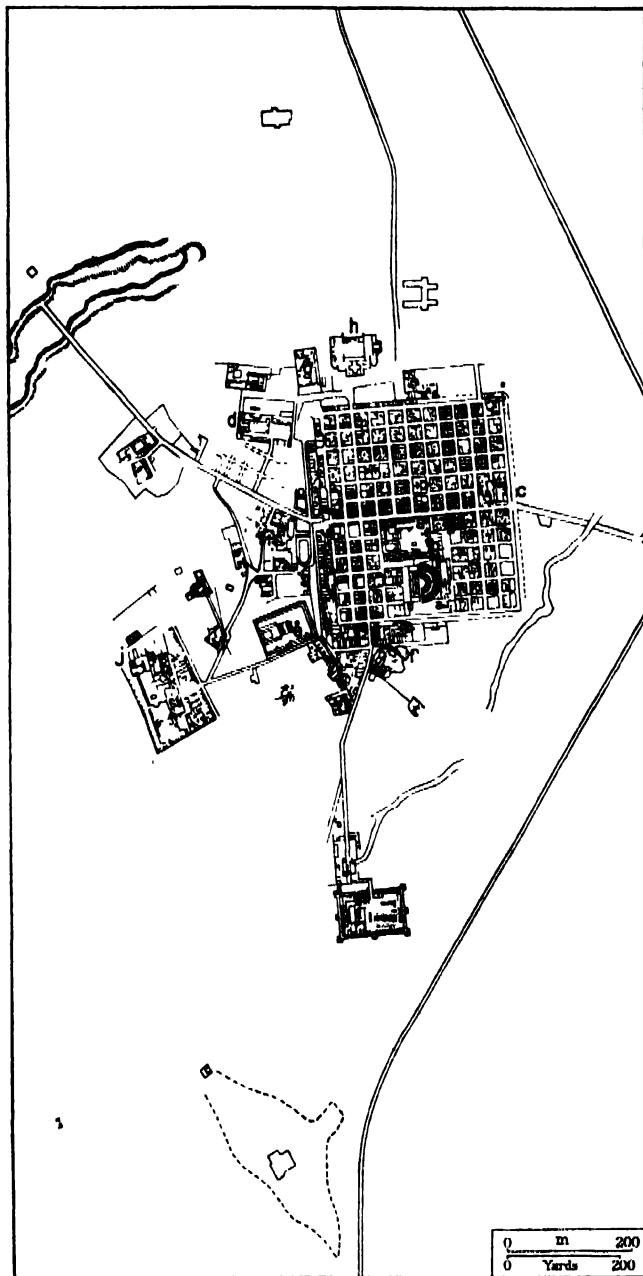
BIBLIOG. S. Gsell, *Atlas archéologique de l'Algérie*, Algiers, Paris, 1911; *Recueil 1936-1937 de la Société de Préhistoire et d'Archéologie de Tébessa*, Algiers, 1938; *Série de Roch, Tébessa, antique Thèveste*, Algiers, 1952.

Ténès (Cartennas or Cartennae). Department of Alger. Roman colony of Mauretania Caesariensis. It is a small port at the mouth of the valley of the Allalah, the wadi followed by the road leading to Castellum Tingitanum (Orléansville). A mile and a quarter inland is the ancient Ténès, first mentioned in the 4th century.

As its name attests (*gart*, city), it was a Punic port; perhaps it is to be identified with "Chalca, city of the river" mentioned in the *Periplus of the Pseudo-Scylax*, or with "Chalce, city of the Phoenicians," which Stephen of Byzantium says was near a native town, perhaps the old Ténès. It became a colony of Augustus, founded between 27 and 25 B.C. for the veterans of a legion of the army of the Triumvirs. At the time of Hadrian it fended off an attack of the Bequates. About 145, under Antoninus Pius, it became, along with the other ports of Mauretania Caesariensis, a disembarkation point and base of operations for the detachments of legionnaires called

to put down the revolt of the Mauretanians. It was an episcopal see, and the relics of St. Fabius were venerated there. At the time of St. Augustine it was the seat of the dissident Donatist sect of the Rogationists.

Remains of the city walls have been found, as well as an aqueduct and numerous cisterns, villas with mosaics, cemeteries with cremation tombs from the 5th century, and Christian cemeteries with rock tombs and mosaics containing inscriptions.



Timgad. Sections and monuments: (a) Forum; (b) Basilica; (c) great eastern baths, (d) church; (e) Capitol; (f) great southern baths, (g) bath complex; (h) great northern baths; (i) fortress and Byzantine basilica; (j) Donatist religious complex.

From the Islamic period are the mosque of the old city (10th or 11th cent.) recalling the "mosques of Ifrikia" (9th cent.).

There is also a fortress, probably built in the 11th century.

BIBLIOG. S. Gaell, *Atlas archéologique de l'Algérie*, Algiers, Paris, 1911, fasc. 12, no. 20; A. Dessus-Lemare and G. Marçais, *La mosquée du vieux Ténès*, RA, 1924, p. 520 ff.; J. Carcopino, CRAI, 1942, p. 318; J. Carcopino, *Le Maroc antique*, Paris, 1943, p. 262 ff.

Teniet el-Kebch. Two Byzantine churches, one 45 × 104 ft. and the other 45 × 79 ft.

Tiddis (Castellum Tidditanorum). Department of Constantine, near the canyon of Kheneg, 10 miles northeast of Constantine.

There are remains dating from the Neolithic age up to the Islamic middle ages (Hafsid period). On the western slopes of the mountain are some dolmens. The medieval city, built of reused materials, rises above the ancient structure. On the north side is a monumental gate of the city, from which the *cardo* begins. The forum, onto which three large halls opened, was small and decorated with statues of which some bases have been preserved, including that of the statue of the prefect of Rome, Lollius Urbicus, whose family lived near Tiddis. The sacred buildings are numerous: a Mithraeum with a grotto and perhaps arrangements for the taurobolium; two vast sanctuaries, dedicated respectively to Vesta and the Ceres; shrines with apses and connected buildings in which are inscriptions of religious colleges; on the top of the hill a sanctuary; a chapel; and Christian baptisteries. On the east side of the hill was a vast potters' quarter in which interesting ceramic factories and a great quantity of pottery have been found. A powerful bulwark protected the city on the east side. The most important cemeteries were situated on the hill to the east of Tiddis.

BIBLIOG. A. Berthier, *Tiddis, antique Castellum Tidditanorum*, Algiers, 1951.

Tigzirt (Rusucurru). Commune of Tizi Ouzou. It grew up in a small, well-sheltered bay as a Punic port and then became a native settlement. From the time of the occupation of Mauretania, a first Roman nucleus had established itself on the acropolis of Taksebt, which is 2 miles from the original town; at the beginning of the 3d century at the latest the nucleus became a colony, and at the same time the native city developed and became Romanized. Christianity appeared in the 3d century, and in the 4th or 5th century Rusucurru became an episcopal see. Taksebt was abandoned in the 5th century, and urban life then took refuge in the port, which in the 7th century was still occupied by the Byzantines.

In Tigzirt are remains of the 2d-century city walls, the Byzantine bulwark, the forum, the curia of Septimius Severus, the baths, some cisterns, shops and warehouses, and a Christian basilica with a baptistery and several cemeteries. From the Byzantine period is a large church 69 × 131 ft. with Doric, Ionic, and Corinthian capitals. There is a mosaic pavement with a baptistery connected to the north-east part of the sacristy; a church 44 × 98 ft.; a chapel 29 × 60 ft.; and a chapel 38 × 66 ft.

At Taksebt there are traces of a bastion, baths, some unidentified ruins, a large mausoleum, a cemetery, and a Christian basilica with connected buildings.

BIBLIOG. P. Gavault, *Etude sur les ruines romaines de Tigzirt*, Paris, 1897; Cabrol-Leclercq, s. v. Tigzirt, 1952; M. Euzennat, *L'histoire municipale de Tigzirt*, Mél, LXVII, 1955, pp. 127-48; S. Lancel, *Architecture et décoration de la grande basilique de Tigzirt*, Mél, LXVIII, 1956, figs. 290-333.

Tihert. The ancient capital of the Rustamids, entirely in ruins.

BIBLIOG. G. Marçais and A. Dessus-Lemare, *Tihert-Tagdemt*, RA, 1945, p. 24 ff.

Timgad (Thamugadi). City in Numidia, situated on the northern slopes of the Aurès Mountains on the strategic road that connected Theveste to Lambaesis. Founded in A.D. 100 under the legateship of L. Munatius Gallus, it developed rapidly under the last Antonines and under the Severi. Christianity was established quite early, and Timgad was an episcopal see in 256. Toward the end of the 4th century and the beginning of the 5th it was, under the influence of Optatus and then of Gaudentius, the true capital of Donatism. Destroyed by the Mauri of the Aurès about 500, it had a brief revival in the Byzantine period under the protection of a citadel built in 539 by the Patrician Solomon. In 641 and again in 647 a chapel was built. The city appears to have been rapidly abandoned soon after 647, for its name disappeared from history.

The ruins consist of three parts: the city of Trajan, originally a square 1,164 ft. on each side and divided into 144 identical insulae, some of which are grouped together to permit the construction of public or private buildings of larger size; the suburbs, which began to spread haphazardly in the 2d century around the original colony, especially to the west and south; and the Byzantine fort, situated 820 ft. to the south of Trajan's city and built on top of a complex of buildings of the Severan period. The singular importance of Timgad is due to the continuity and the extent of its ruins, which offer the most complete and authentic image available of a provincial Roman city. In addition, the monuments are of interest in themselves. The forum (141 × 164 ft.) was one of the largest in Africa; the theater, completed between 161 and 169, had a capacity of 3,500 to 4,000 spectators. There are 14 baths; numerous temples, among

which are the capitol and the Temple of the Aqua Septimiana Felix; markets; a library; numerous churches and chapels; and the Donatist cathedral, with a noteworthy baptismal font. The Byzantine fort and the triumphal arch, erroneously thought to have been built by Trajan, are worthy of special mention for their particularly good state of preservation. The following belong to the Byzantine period: a large church 51×128 ft. at the northwest extremity of the city; a church 40×44 ft. south-southwest of the north gate; a chapel 36×39 ft.; a chapel 35×36 ft. situated about 700 ft. from the capitol; the chapel of Duke John; a chapel within the Byzantine fort; and the Byzantine fort, 221×365 ft., with rectangular towers at the corners and in the middle of the sides, one of which constitutes the entrance.

BIBLIOG. C. Courtois, *Timgad, antique Thamugadi, Algiers, 1951* (with bibliog.).

and, outside the walls, the Basilica of St. Salsa, that of the archbishop Alexander (ca. 400) and that of the blessed martyrs Peter and Paul. There are extensive cemeteries, the eastern one having been used without interruption until the Byzantine period. Frequently there were three levels of tombs, one above another (tombs carved out of rock, cremation tombs with funerary urns, Christian sarcophagi, and tombs covered with tiles). The western cemetery contains the crypt of the first bishops, an *area* of martyrs, and a large round mausoleum surrounded by underground tombs. In the Christian stratum of the two cemeteries have been found more than 150 *mensae*, or slabs for use in funerary banquets. There is also a small Byzantine stronghold surrounded by a bastion consisting of nine square towers of varying dimensions.

BIBLIOG. L. Leachi, *Tipasa, Algiers, 1950*; J. Baradez, *Tipasa, ville antique de Mauretanie, 1956*



Tipasa. Key: (1) Circle of Roman walls. Sections and monuments: (a) Forum; (b) Basilica; (c) new temple; (d) Amphitheater; (e) Theater; (f) great Christian basilica; (g) western cemetery and Chapel of Archbishop Alexander; (h) Basilica of Peter and Paul; (i) eastern cemetery and Basilica of St. Salsa.

Tipaza (Tipasa). Small port about 43 miles west of Algiers. There are traces of Upper Paleolithic remains. In the 6th and 5th centuries B.C. it was a Punic port. As a city of the kingdom of Mauretania it was raised by Claudius to the rank of a colony with Latin rights, and it became a Roman colony under either Hadrian or Antoninus Pius. In the period of Antoninus Pius it was the military center and the base of operations for the war against the Mauri, in which its port was used, and a vast fortified wall was built (146-47). The walls of the military base became those of the city, which thus extended beyond its old boundary (second half of the 2d cent.). These walls successfully withstood the assaults of the Berber rebel Firmus. The Vandal invasion took place about 430, and the walls were methodically dismantled, probably by the Vandals themselves, about 470. Tipaza was reconquered by the Byzantines around 534. After the Arab invasion the remains of the city were given the name "Tefassed" ("ruined"), and it was used as a stone quarry by the bey of Algiers.

There remain traces of the first city walls, which go back to Iuba or Claudius and are preserved for the whole perimeter of 9,200 ft., as well as of the second walls, from the time of Antoninus Pius, in which are three monumental gates. Excavated monuments include the forum; the capitol; a judiciary basilica built after the victory over the Mauri which took place about 148, with a very fine mosaic representing prisoners; and the *decumanus*, running along the central promontory. There are also the *decumanus* of the lower city, which served the enlarged city within the second line of walls; the group consisting of two temples, one on either side of the *decumanus*; the amphitheater; the theater; a nymphaeum; the public and private baths; a factory; and private houses. Christian monuments include a large basilica from the 4th century with a nave and eight aisles 171 ft. long; a baptistery; another basilica built on the site of a temple;

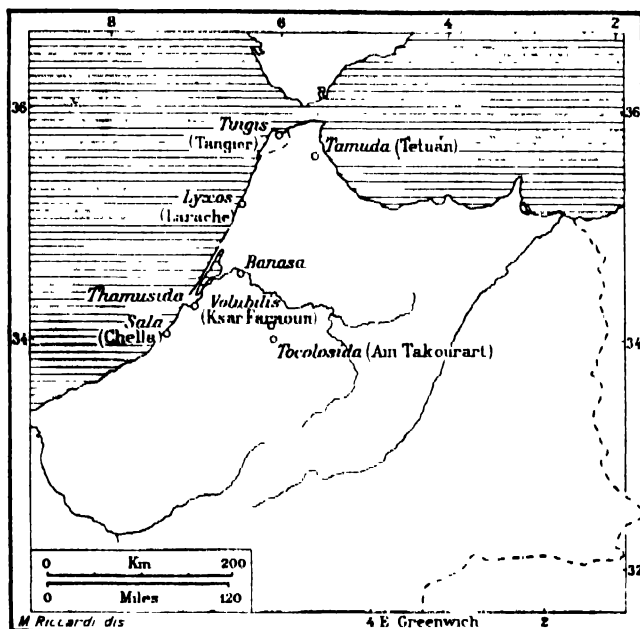
Tlemcen (Pomaria). Department of Oran; Mauretania Caesariensis. Situated on a steep cliff, it has rock shelters of the Neolithic period. It was the seat of a Roman military garrison and of the free city of Pomaria (R[es] P[ublica] P[omariensium]). In the plain of the Négrier there are sections of a Roman road. Milestones have been found belonging to five roads connecting Pomaria to Numerus Syrorum (Marnia), Altava (Lamoricière), Tepidae (Les Abdellys), Albulae (Ain Témouchent), and Siga (Rachgoun). There was a bath for the garrison; two bases with dedications to the Berber deity Aulisa; and numerous funerary inscriptions, of which 12 are preserved in the museum and 16 have been reused in the construction of the base of the minaret of Agadir. The Christian inscriptions are characterized by the formulas *fecit domum aeternalem* (he has raised up an eternal home) and *domum romulam* (a home in the manner of the Romans).

The Mosque of Tlemcen was begun in 1106 and completed in 1136. In spite of successive additions that altered the original plan, it is quite similar to the mosque of Algiers, although its decoration is much more elaborate. In front of the mihrab, for example, is a fine ribbed cupola resting on a quadrangular drum by means of stalactitic squinches. The city has a modern addition beyond the older walled city.

The Mosque of Agadir, in the suburbs of Tlemcen, was begun in 790 and finished in 814 (period of the Idrisids); nothing remains except the minaret. The Mosque of Sidi Bel Hassen, built in 1296 (period of the 'Abd al-Wadids), is now used as an archaeological museum. The Mosque of Ulad al-imān, built about 1310 (period of the 'Abd al-Wadids), is in ruins today. Other mosques are that of Sidi al Halwi, built in 1353 (period of the 'Abd al-Wadids); Lalla Ruya, built about 1791 (Turkish period); and Al-Ubbad (Sidi bu Medina, suburb of Tlemcen), built in 1339 (period of the 'Abd al-

Wadida). The Madrasah of Al-Ubbad was completed in 1347 (period of the 'Abd al-Wadida). The kubba of Sidi Ibrahim was built about 1361 (period of the 'Abd al-Wadida). The bath of the dyers is from the 12th century (period of the Almoravids); the sahrj, or cistern, from the 14th century (dynasty of the 'Abd al-Wadida); the city walls and gates from the 11th and 12th centuries (period of the Almoravids). The Archaeological Museum (see above, Mosque of Sidi Bel Hassen) contains various Islamic inscriptions, funerary steles, panels of mosaic in majolica, wooden lintels, sculpture (12th and 14th cent.), majolica, pottery (10th cent.), and objects in plaster.

BIBLIOG. Brosselard, *Inscriptions arabes de Tlemcen*, *Revue africaine*, 1836-62; A. Berbrugger, *Epigraphie de Tlemcen*, *Revue africaine*, II, 1837, p. 62; G. Marçais and W. Marçais, *Les Monuments arabes de Tlemcen*, Paris, 1903; A. Bel, *Fouilles faites sur l'emplacement de l'ancienne mosquée d'Agadir (Tlemcen)*, *Revue africaine*, 1913, p. 27 ff.



Morocco: principal centers of antiquity.

Tobna (Thubunac). Remains of a church under which were found tombs containing Byzantine coins. Byzantine fortress 190 × 283 ft. with walls about 7 ft. thick, corner towers about 23½ ft. wide, and other towers in the sides, one of which serves as a gate.

"Tombeau de la Chrétienne" ("Tomb of the Christian Woman") (Kbor Er Rouma). Department of Alger, 40 miles west of Algiers; situated at an altitude of 856 ft. It is a circular edifice 203 ft. in diameter and about 130 ft. high, built of squared blocks. It rests on a square platform and consists of a cylindrical drum decorated with 60 attached Ionic columns surmounted by a stepped cone. The monument received its obviously inaccurate name from four imitation doors with moldings in the form of large crosses. The entrance is underground, situated to the east, and opens upon a corridor that runs along the north wall and branches, on the west, toward the center, where it ends in a small vaulted room. The only decoration is a lion and lioness at the entrance to the corridor. The form of the tomb is reminiscent of the Egyptian mastaba, the Medracen (another mausoleum in Algeria), and several buildings of the Hellenistic period. The form of the semicolumns and the style of the capitals suggest a Greek architect influenced by the Alexandrian school. The dating of the mausoleum is not certain; it could be the tomb of Bocchus, king of Mauretania (d. 33 B.C.) or of Juba II and his consort Cleopatra Selene. (See PL. 18.)

BIBLIOG. M. Christoffe, *Le Tombeau de la Chrétienne*, Paris, 1931; P. Romanelli, *La tomba della Cristiana ed il suo mistero*, AC, IV, 1952, pp. 274-83.

Zabi Justiniana. Byzantine fortress.

Zana (Diana Veteranorum). Department of Constantine, 37 miles northwest of Batna. It was inhabited and perhaps founded by veterans and was placed on the roll of the Papirian tribe; originally a vicus, or hamlet, it was made a municipality by Trajan. In an inscription of 141 it is mentioned as a free city and in another of

the 3d century as a colony. The emperors, especially Caracalla, accorded it their protection. Of the episcopal see that was established there only one bishop, the Donatist Fidentius (411), is known. Important traces of the Byzantine occupation survive. At the time of the Arab invasion Zana was the capital of the region. It was destroyed during the 10th century by the governor of the Zab.

There remain a spacious forum, a triple arch dedicated to Marcinus and to Diadumenianus, a single arch of the 2d or 3d century, and, to the south, a temple of Diana of which a monumental gate survives. A Byzantine church 56 × 108 ft., erected on the paving of a Roman forum, has numerous Roman remains incorporated into it, including the pedestal of a small triumphal arch. There is a Byzantine fortress 174 × 200 ft. with rectangular towers 28 × 31 ft. at the corners, walls 7 to 8 ft. thick, and curtain walls 5 to 5½ ft. thick. There are two mausoleums, numerous sarcophagi, an aqueduct with reservoirs, and various arrangements for capping springs.

BIBLIOG. CIL, VII, 4575-625; S. Gsell, *Atlas archéologique de l'Algérie*, Algiers, Paris, 1911, fasc. 27, no. 62; S. Gsell and H. Graillot, *Ruines romaines au nord des monts de Batna*, Mém. XIV, 1894, p. 526 ff.

Zarai. Byzantine fortress 162 × 200 ft. with square towers at the corners.

MOROCCO. A few rock drawings have been discovered in southern Morocco near the Atlantic coast in the region of the Sous (Tamegdoult); others have been found farther inland, to the south of the Anti-Atlas and the upper Guir, in the Moroccan Sahara, where there are petroglyphs near Tarhit representing for the most part cattle. Farther south rock paintings have been found between El-Arouedi and Igli.

Ain Takourart (Tocolosida). Region of Meknes, situated at the southwest extremity of the Djebel Zerhoun in the neighborhood of Moulay Idriss of the Zerhoun. It was a frontier city on the limes of Mauretania Tingitana, about 3 miles south of Volubilis; it is connected to Tangiers by a road (Antonine Itinerary 23, 1) which continues south into the territory of the Baquates. Founded by Claudius, the city was destroyed, probably toward the end of the 2d century, and a military camp was built on the site by the Severi. This was abandoned at the time of the withdrawal of the Roman troops toward the end of the 3d century.

The fortifications, built by Claudius, have been partly recovered and show up well in aerial photographs. There are remains of streets and houses, perhaps a forum, baths, the 3d-century camp, and the aqueduct. Tocolosida is the most remote settlement on the limes Tingitanus so far discovered; a series of observation towers connected it with Volubilis and the other camps scattered from the Zerhoun to the sea.

BIBLIOG. L. Chatelain, *Tocolosida*, *Mémorial H. Basset*, Paris, 1928, I, pp. 197-201; L. Chatelain, *Le Maroc des Romains*, Paris, 1944, pp. 129-34.

Amargu. Ruined Almoravid fortress dating from the 12th century.

Banasa. The ancient Colonia Iulia Valentia Banasa and, for a brief period at the time of Marcus Aurelius, Aurelia Valentia Banasa. On the left bank of the Sebou, about 10 miles west of Mochra Bel Kairi. There are no traces of prehistoric remains. At a great depth in the lower archaeological stratum painted ceramics have been found which, however, imitate Iberian or Punic pottery. The Roman city was built on two hills, probably artificially constructed for protection from the floods of the Sebou River. It was founded by Octavian during the period between the death of the Mauretanian king Bocchus II (33 B.C.) and the ascension to the throne of Juba II (25 B.C.). In the lowest Roman archaeological stratum several lime kilns have been found, as well as kilns for the manufacture of bricks and tiles or ceramics. The colony was populated by veterans of Spanish, Mauretanian, or Syrian origin, as the numerous military diplomas dating from the time of Domitian to that of Marcus Aurelius and Verus would suggest; it grew rich quickly from agriculture. The city was destroyed under Gallienus and again under Probus and was finally abandoned.

The following have been found: remains of the city walls, the forum surrounded by porticoes, the capitol with a cella in seven parts, public and private baths with mosaics and wall paintings, a market, houses with peristyles, olive presses, and shops. There may have been an amphitheater excavated in the earth.

BIBLIOG. R. Thouvenot, *Une colonie romaine en Maurétanie Tingitane*, Valentia Banasa, Paris, 1941.

Casablanca (Dar el Boida). A village in 1912, Casablanca has today become a modern metropolis with a city center including cinemas, churches, and fairs. It also has a garden city, Bourgoigne.

and a new native city, Ain Chock (1921). It has a museum of indigenous art.

Chella (Sala). A region of Rabat (see below), on Wadi Bou Regreg, with traces of neolithic settlement. A Roman center existed near the estuary of the river, on the frontier of the new province of Mauretania Tingitana and of the Autololes, from the time of the conquest (A.D. 40-42). It became a municipality, probably under Trajan, and then a colony, perhaps at the beginning of the century; as it was continually threatened by the neighboring tribes, the city was protected by a defense line beginning at the sea and following the limes southward. Sala was abandoned by Roman troops at the end of the 3d century (284-85) and remained outside the borders of the Tingitana as reorganized by Diocletian. The Roman city, with the exception of the primitive military encampment, is completely covered by an Islamic cemetery surrounded by bastions.

Traces of the Roman walls have come to light, as well as part of the forum and the surrounding section, a triumphal arch, baths, shops, the curia, perhaps built by Trajan, various public buildings, several cemeteries, numerous inscriptions, and fragments of statues.

BIBLIOG. H. Bassot, E. Lévi-Provençal, Chella, une nécropole mérovinienne, Paris, 1923; L. Chatelain, Le Maroc des Romains, Paris, 1944, pp. 81-101; J. Carcopino, Le Maroc antique, Paris, 1947, pp. 200-30.

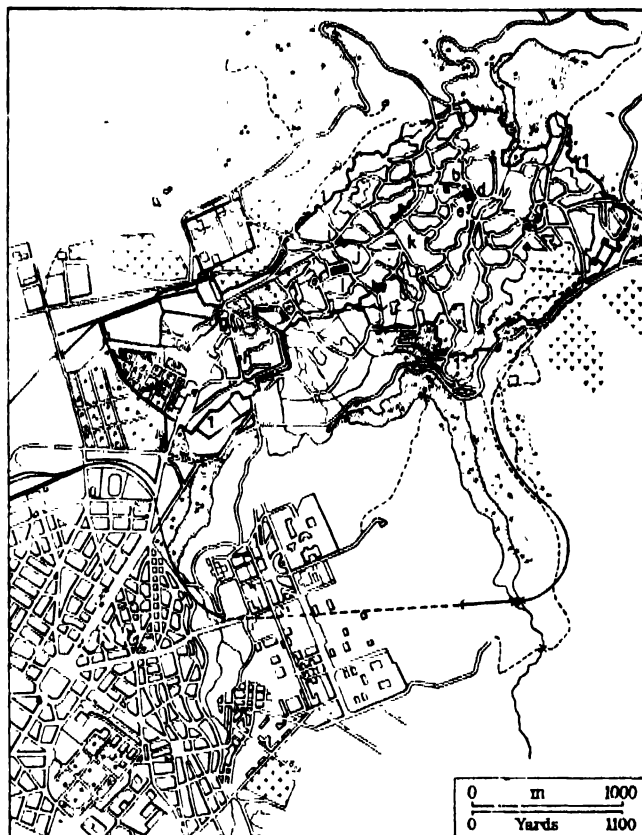
Fez (Fas). One of the major cities of Morocco; the new city is separate from the old. The Great Mosque of Qarawiyyin was built in 859 and enlarged in 956 and again in 1135. It is the oldest mosque in Fez and one of the most imposing of the Maghrib. The Mosque of the Andalous was built at about the same period, and a minaret was added in 956. It was rebuilt between 1203 and 1207, and in the course of the following centuries it was enriched, especially in 1307, when a fountain was added, and in 1415, when the library was built. The Mosque of Abu 'l-Hasan was built in 1341 (period of the Merinids). The Mosque of Cherablino also dates from the period of the Merinids. The Great Mosque of Fez-Djedid was built in 1276 and extensively restored in 1395. The Mosque Al-Zhar of Fez-Djedid was built in 1357 (period of the Merinids). The Mosque called Jami Hamra (The Red Mosque) of Fez-Djedid is of the period of the Merinids. The Madrasah as-Saffarin was founded in 1271; that of Fez-Djedid in 1320; that of as-Sāhrij between 1321 and 1323; as-Sba'iyyin in 1322; al-'Attārin between 1323 and 1325; and Mebahyia in 1346. Next to the Madrasah bu-Ināniyya (1350) is a notable clock with 13 bronze chimes. The Madrasah Shal-arrāziyyin dates from 1670. The Tomb of the Merinids dates from the 14th century, the Sanctuary of Mulāy Idris from the 18th century, and the Hammām al-Mukhḥis baths from the 14th century. The walls of the city are of the Almohad period with gates of the Merinid era. The fountain of the Fondouq an-Najarin (16th cent.) is decorated with fine tiles. The Dār Bēdā is a 19th-century palace. There are many souks (Souk el-'Attarin, Souk el-Khyatin, Souk el-Tallis, Souk el-Haik, Souk el-Sehkan, Souk el-Bali, Souk of the Kissariyya, etc.). Dār Batha (19th cent.) contains the museum of Moroccan art, which includes collections of local fabrics and especially of silk of Fez, carpets and decorated curtains of the Middle Atlas, embroidery and pottery from Fez, modeled pottery, decorated leather, copper objects, wrought iron, damascened steel, woodwork (sculpture, incrustation work, intarsia), and jewelry. The collection of arms and the music room are noteworthy.

BIBLIOG. H. Gaillard, Une ville de l'Islam: Fez, Paris, 1906; M. Dieulafoy, Fez-Meknès, Album du Maroc occidental, préface de A. Bel, Paris, 1916; Lanbe, Fez, Meknès et la région, Album de photographies, préface et notice de A. Bel, 1918; P. Picard, La mosquée du El-Qarawiyyin, France-Maroc, March 15, 1918; A. Bel, Inscriptions arabes de Fez, Paris, 1910, JA, 1917-19; S. Demade, Les portes de Fez, ap. France-Maroc, 1922, pp. 42-3; E. Pauty, Le plan de l'Université Qarawiyyin à Fez, Hesperis, III, 1923, p. 515 ff.; H. Terrasse, La jama al-gnaiz de la Mosquée d'al-Qarawiyyin, Actes du huitième Congrès de l'Institut des Hautes Etudes Marocaines, Paris, 1933; B. Maslow, Les mosquées de Fez et du Nord du Maroc, Paris, 1937; H. Terrasse, La mosquée des Andalous à Fez, Paris, 1942.

Larache (Alē, Alēz, Alēz, Lixus, Lix, Lix, al-'Arūsh). Former Spanish Morocco. The ancient Phoenician city was located on one side of the lagoonlike estuary of the Wadi Lukkos; the remains of a Libyan settlement are on the opposite bank. Although tradition has it that the Garden of the Hesperides was situated in the area and the struggle between Herakles and Anteus was supposed to have taken place here, the earliest archaeological remains that have been found date from the 6th century B.C. Carthaginian penetration is documented by a Punic inscription from the 2d century B.C. The city became a colony in the time of Claudius. It was badly damaged as a result of war in the time of Caligula. In the 9th century it fell under the domination of the Idrisids. The Arabs and the Portuguese disputed over its domination, and it later became a base for pirates. Ceded to Spain in 1610, Larache was reconquered by the Arabs in 1689. In 1911 it again came under Spanish rule.

The ancient city stands 3 miles from the modern one. The city walls in ashlar masonry, a house with a mosaic of Mars and Rhea Silvia, a temple, and a cemetery have been found. In the Arabic city are the old Arab fort, the "Castle of the Stork," and a 17th-century Spanish fortification. The modern city is typically colonial in style.

BIBLIOG. Dessau, RE, s.v.; M. Tarradel, Sobre el presente de la arqueología punica, Zephyrus, II, 1952, p. 165 ff.; M. Tarradel, FA, V, 1953, no. 4526, VII, 1955, no. 3923, VII, 1956, no. 3892; P. Cintas, L'expansion carthaginoise au Maroc, Paris, 1954, p. 62 ff.



Fez. (1) Wall of the ancient city. Sections and monuments: (a) Madrasah as-Sāhrij; (b) Madrasah al-'Attarin; (c) Mulāy Idris; (d) Qarawiyyin University; (e) Madrasah as-Saffarin; (f) Mosque of the Andalous; (g) Great Mosque; (h) Jami Hamra; (i) Madrasah bu-Ināniyya; (j) Mosque of Abu 'l-Hasan; (k) Dār Adiyel; (l) Dār Batha (Museum of Moroccan Art).

Marrakech. The ruined Mosque of Yūsuf ibn Tashfin is the oldest in the city (period of the Almoravids, 12th cent.); excavations were in progress at midcentury. The Mosque of the Kutubiyya was built about 1146 and subsequently destroyed for the construction of a new mosque; its foundations were being excavated in the mid-20th century. The second mosque of this name was built toward the end of the 12th century; it still exists and is the cathedral mosque of Marrakech. The Mosque of the Kusba was built in 1107 (Almohad period) and restored in the 14th century; it has an almost square plan, 232 ft., 6 in. × 254 ft., 3 in. The Mosque of Bāb Duk-kāla was built in 1557 (period of the Saadians), the Mosque of Al-Muasin in 1562 (period of the Saadians), and the Kubba Ba'adiyyin in the period of the Almoravids. The Madrasah ben Yūsuf dates from the 18th century, the zaouia of Sidi 'l Jazuli from 1554, and that of Sidi bel 'Abbās al-Sabli also from the 16th century. The mausoleum of the Saadian princes is from the 16th century. The 12th-century walls have a gate called Bāb Aguenau. The Palace of Ali ibn Yūsuf is of the Almoravid period. The Palace of the Badi was built between 1578 and 1593 (period of the Saadians). Dār el Mahzen was built in the Almohad period and enlarged by the Saadians. The Palace of the Bahiya was built in the 19th century. The Gardens of the Aguedal were founded by the Almohads and restored by later dynasties. Dār Si Sa'id houses a museum of Moroccan art. It includes carpets and textiles from the Upper Atlas, silk, copperwork, ironwork, modeled pottery, woodwork, jewelry, weapons,

and straw mats. There is also a music school. The Palace of the Bedi (16th cent.) contains a small museum of gems and ceramics.

BIBLIOG. J. Gallotti, Le lanternon de la Koutoubiya de Marrakech, *Hespéria*, 1923, p. 37 ff.; H. Basset, Une primitive mosquée de la Koutoubiya à Marrakech, *CRAI*, 1923, p. 248 ff.; G. Rousseau, Le mausolée des princes saadiens à Marrakech (inscriptions trans. by F. Arie, preface by E. Doutte), Paris, 1925; H. Terrasse, Les monuments almoravides de Marrakech, *Actes du XI^e congrès des Orientalistes*, Paris, 1948, pp. 326-27; H. Terrasse, Découvertes archéologiques à Marrakech, Paris, 1952; C. Deverdun, L'âge des tombeaux Saadiens de Marrakech, *Hespéria*, 1953, p. 557 ff.

Meknes. The Mosque of Lalla Awda was built between 1672 and 1727 (dynasty of the Alaouites). The Mosque of Ar-Roua was built between 1762 and 1790 (dynasty of the Alaouites). The Madrasah bu-Ināniyya dates from the 14th century (dynasty of the Merinids). The gate called Bāb Mansur and the Dār al-Bayda date from the 18th century (dynasty of the Alaouites). The Dar Djamaï (19th cent.) is the seat of the Museum of Regional Islamic Art, displaying carpets and textiles of the Middle Atlas, wrought iron, copperwork, carved and painted wood, Berber pottery, objects in leather, miniatures, *zīj* (intarsias) of majolica, jewels, and straw mats.

The modern city is an extensive industrial community distinct from the old imperial city; it grew up at the beginning of the 18th century.

BIBLIOG. Emoet, Les portes de Meknès, notes de H. Saladin, *BAC*, 1915, p. 242 ff.; M. Dieulafoy, Fes-Meknès, Album du Maroc occidentale (preface by A. Bel), Paris, 1916; Emoet, La grande mosquée de Meknès, notes de H. Saladin, *BAC*, 1917, p. 168 ff.; Laribe, Fes, Meknès, et la région, Album de photographies (preface and notice by A. Bel), 3 vols., 1918; H. Terrasse, La mosquée de Lalla Aouda de Meknès, IV Congrès des Sociétés Savantes de l'Afrique du Nord, Rabat, 1938, Algiers, 1939, p. 595 ff.

Mogador Island (Tamusiga [?] or Cerne [?]). On the Atlantic coast opposite the city of Mogador; a rocky islet 3,000 ft. from the coast. In the 4th and 3d centuries B.C. there was a Punic port here, the origins of which may have been quite remote. The island was still occupied at the time of Juba II and may be identified with certainty with the Purpurariae of Pliny (*Naturalis Historia*, VI, 203); in fact, on the coast nearby great quantities of shells of *Purpura haemastoma*, used as a dye, have been found. The island was apparently inhabited without interruption throughout the Roman period up to the 4th century A.D. Until the time of the Arab conquest the city maintained relations with Byzantine centers. The Island of Mogador is the most westerly known point of Punic colonization and of the Roman world. The Punic port and subsequent nuclei were established on the east coast of the island, the most protected side; the port itself probably was on the southwest corner. Excavations have brought to light ceramics of the Punic and Iberian types, many with Punic graffiti. There are also cisterns and traces of Roman constructions, a Roman cemetery, and Aretine and Gallo-Roman stamped pottery.

Of the later settlement the *sqala*, 18th-century forts (dynasty of the Alaouites), have been preserved. The *sqala* of the port is the work of a Genoese; that of the kasba is said to have been built by a converted Englishman.

BIBLIOG. P. Cintas, Contribution à l'étude de l'expansion carthaginoise au Maroc, Paris, 1954, pp. 35-9, pp. 111-31, figs. 18-77; R. Thouvenot, Recherches archéologiques à Mogador, *Hespéria*, XLI, 1954, p. 463-67; J. Desjacques and P. Koeberlé Mogador et les îles Purpuraires, *Hespéria*, XLII, 1955, pp. 193-202.

Ōudjda. The Great Mosque was founded in 1296 (dynasty of the Merinids), and there are baths from the same date. A new city has grown up next to the old native city.

Port Lyautey. Founded in 1911, it has a hospital, a church built by the architect Laforgue in 1944, a new Medina, and a river port.

Rabat (al-Rabāt). The huge Mosque of Al-Hasan (475 × 590 ft.) was begun about 1195 (Almohad period) but was never finished. The noteworthy minaret, also unfinished, is 144 ft. high. The Mosque as-Sunna, built about the end of the 18th century, was entirely restored at the end of the 19th century. The funerary mosque in the Chella section is from the 13th century; the upper part of the Kasba of the Udaia was founded by the Almohads (12th cent.), and the lower part is attributable to the Alaouites (17th cent.). The walls are from the Almohad period and have fine gates, among which are that of Bāb ar-Rua and that of the Udaia. The walls and gate of Chella are from 1339. The baths of al-Ālu date from 1355 and those of Chella from 1358. The Museum Prosper Ricard of Moroccan Art is in the Kasba of the Udaia.

For traces of Roman settlement, see Chella (anc. Sala), col. 125.

Next to the native city, which preserves its characteristic aspect because of numerous mosques, there is a garden city built on the plan of Marshal Lyautey, which is now enlarged and flourishing. It has an up-to-date airport.

BIBLIOG. H. Basset, Un aqueduc almohade à Rabat, *Rev. Africaine*, 1923, p. 523 ff.; R. Thouvenot, Une forteresse almohade près de Rabat: Ddira, *Hespéria*, XVII, 1933, p. 59 ff.; J. Caillé, La mosquée de Hasan à Rabat, *Études d'art*, publication du Musée National des Beaux Arts d'Alger, III, 1947-8, p. 107 ff.; J. Caillé, La ville de Rabat jusqu'au protectorat français, histoire et archéologie, 3 vols., Paris, 1949.

Safi. There is a mosque from the 17th century (dynasty of the Saadians) and a Portuguese fortress of the 16th century.

Salé. The Zaouia an-Nussak is of the 14th century. The madrasah was built about 1350 and the walls in the same period; the gate called al-Mrissa was built about 1260.

BIBLIOG. H. Terrasse, Portes de l'arsenal de Salé, *Hespéria*, 1922, p. 357 ff.

Tangier (Libyan, Τίγγις, Τρίγγα, Τρίγῃ, Τίγγων, Τέγγις, Tingia, Tinga, Tenga, Titga, Tanja). The most ancient city of Mauretania, it was founded, according to legend, by Anteus (Pomponius Mela, I, 5, 26) and named for his wife. The tomb of this couple and Sophax, "son of Herakles," are recorded in ancient sources (Plutarch, Sertorius; Strabo, XVII, 3, 8). Tangier was the trading center for the merchants of the region. It received Roman civic privileges from Octavian (Dio Cassius, XLVIII, 45) and became a colony under Claudius. Subsequently it became the capital of Mauretania Tingitana. In 429 it was taken by the Vandals, in 541 by the Byzantines, in 621 by the Visigoths, and in 682 by the Moslems. In the 11th and 12th centuries the Ommiads and the Idrisids contended for control of the city, and it later belonged to the Almoravids (from 1075) and to the Almohads (from 1149). After undergoing Portuguese occupation it passed under Spanish rule in 1578 and English rule in 1661; in 1684 it was retaken by the Moslems. At present the city is under international administration.

The ancient city stood on the same site as the present one, and only a few architectural remains have been found. A notable 14th-century mosque of the Merinid period is to be found in the medieval Islamic city, which was located within the confines of the Kasba.

The Museum of Moroccan Art is in the Dār el Mahzen (18th cent.) and contains carpets from Rabat, "hambel" of Salé, painted wood, jewelry, and pottery.

BIBLIOG. Windberg, RE, s.v.; J. Carcopino, Le Maroc antique, Paris, 1943, passim; M. Tarradel, Marruecos antiguo: nuevas perspectivas, *Zephyrus*, V, 1954, p. 105 ff.

Taaghimout. A ruined Almoravid fortress (12th cent.).

Taza. The Great Mosque, founded about 1135 (Almoravid period) on Almohad foundations, was enlarged toward the end of the 13th century (Merinid dynasty). The madrasah is from the 14th century (Merinid dynasty). The "Bastion" dates from the second half of the 14th century (Saadi period).

BIBLIOG. H. Terrasse, La grande mosquée de Taza, Paris, 1943.

Tetuán (Tamuda, Tsettaun, Tetwan). In former Spanish Morocco. The ancient city was located at a distance from the Moslem city built by Abū Thābit 'Amr ibn 'Abd-allāh in 1310. A corsair base, it was destroyed by King Henry III of Portugal in 1400. The present-day city corresponds to that built by Sidi 'Alī al-Mandrī in 1402. The plan of the Punic city is known, and a late Roman fortress has been preserved. Local ceramics of the late imperial period, imitating Campanian wares, have been found. From the Islamic period there remain the Khalifa palace, from the 17th century (completely reconstructed in 1948), and the 15th-century fortifications, with later additions. There is an archaeological museum with objects from various sites of the region.

BIBLIOG. Treidler, RE, s.v.; P. César Morna, A. C. Giménez Mozal, Excavaciones en Tamuda, Madrid, 1941-48; M. Tarradel, Estado actual de nuestros conocimientos sobre Tamuda y resultados de la campaña de 1948, *AEA*, 1949, p. 86 ff.; M. Tarradel, *FA*, III, 1951, no. 3502, IV, 1952, no. 4048, VIII, 1956, no. 3914.

Thamusida. On the left bank of the Sebou, 8 miles north of Port Lyautey. It is mentioned in the Antonine Itinerary. No inscriptions giving its name have been found. The garrison of the third Asturian cohort must have been at Thamusida. It consists of a rectangular encampment with rounded corners and small interior reinforcing towers which is reminiscent of that of Lambèse and dates from the 1st century B.C. In addition, it has an extensive line of walls with semicircular exterior towers from the end of the 2d century. Excavations have brought to light a large public building, extensive baths that were remodeled in succeeding periods, and a small temple with a tripartite cella.

BIBLIOG. R. Thouvenot, Rapport sur les fouilles du Service des Antiquités du Maroc, *BAC*, 1954, pp. 53 ff., 62 ff.

Tinnāl. The Mosque of Tinnāl (143 × 157 ft.) was surrounded by a crenelated wall built of courses of bricks covered by a stratum of stamped clay and crushed rock. In the side walls three doors are arranged symmetrically. The minaret, which entirely covers the mihrab and projects on the exterior, is one of the characteristics of this mosque. Even the arches have a certain individuality: next to normal stilted round arches are ogival lobed arches with rectilinear and curvilinear motifs, evidently of Andalusian origin, which occur in the mosques built or embellished by the Almohads and their successors. The fine plaster decoration is harmoniously modeled in *muqarnas* (stalactite forms), flowers, palmettes, shells, cursive writing elegantly curved and enriched by floral motifs, and Kufic writing somewhat thinner than that of the Fatimid period.

BIBLIOG. E. Doutte, Note sur les ruines de Tin Mellal, CRAI, 1901, p. 333. E. Doutte, La mosquée de Tinnāl, JA, 1902; Ferriol, Les ruines de Tinnāl, Hespéris, 1922, p. 162 ff.; P. Picard, Note sur la mosquée de Tinnāl, Hespéris, 1923, p. 524 ff.

Volubilis (Ksar Faraoun). Region of Meknes, on the west slope of the Djebel Zerhoun, in the neighborhood of Moulay Idriss of the Zerhoun. The locality has been inhabited since the Neolithic period, the structures of the first village being grouped around a tumulus. Carthaginian influence came by way of the coast (neo-Punic inscriptions have been found), and the city became, under the reign of Juba II at the latest, a provincial capital of the king of Mauretania. It was Romanized before the annexation of Mauretania, which took place through the efforts of Claudius in 40-42; it was faithful to Rome at the time of the revolt of Aedemon and was made a municipality as a reward. Once it had become the residence of the procurator, the city held the command of the nearby limes located next to Mauretania Tingitana. In the course of the 2d and 3d centuries it was several times attacked by the Baquates and was in part rebuilt at the time of the Severi. It was finally abandoned by the Romans about 284-85 and remained outside of the new borders established by Diocletian. Toward the middle of the 7th century the city still maintained a Latin and Christian civilization which persisted perhaps until the arrival of Idris I, who established his capital there (788).

A strong city wall built by Marcus Aurelius survives. The complex of the city is completely preserved beneath the later Islamic structures: the forum, a basilica with two opposing apses (cf. the basilica of Leptis Magna), the capitol of the Severi, which covers the forum and temples of the 1st century, a triumphal arch of Caracalla, the aqueduct, bathhouses decorated with numerous mosaics, and various cemeteries with inhumation and cremation burials. In the museum is a rich collection of bronzes found during the excavations, including a statue of an ephebus, the bust of an unknown prince, perhaps Hiero II, and a bust of Cato.

BIBLIOG. J. Carcopino, Le Maroc Antique, Paris, 1947, pp. 167-90, 231-304; R. Thouvenot, Volubilis, Paris, 1949; J. Carcopino, Notes sur les deux bustes trouvés à Volubilis, Société Archéologique de Constantine, *Libre du Centenaire*, 1933, pp. 61-83.

Río DE ORO. Spanish Sahara. Rock art was discovered only recently in this region, and only petroglyphs have been found. Although rock drawings have been discovered as far north as the basin of the Wadi Dra, most of them were found along the course of and near the Saguiet el Hamra, especially around Smara. In that region, and precisely at el-Asein Bukerch, are representations of animals, including antelopes, ostriches, rhinoceroses, and elephants, as well as anthropomorphic profiles. Cruder and perhaps more recent in date are the zoomorphic figures found on the nearby hillocks of Asli and Asli Ricchies. Skillful engravings have been found not far from Saguiet, at Tucet en Haila and at Pozo Mecaiteb, where zoomorphic outlines, isolated or in groups, men with animals, and geometric figures are represented on slabs of slate.

South of the Saguiet there have been only a few finds — at Odolosa Amgala, at the source of the Wadi Zeluan, now dry, and at Gleibat Moadat, on the slopes of the mountains of Adrar Sut-Tuf toward the plain of Tiris, where there are figures of cattle and a schematic representation of a cart, both considered to be from the Libyan-Berber period.

There are meager remains from the historical period. The modern capital is Villa Cisneros.

NOTE. The forms used for Arabic names in this article, with the exception of certain established English forms, follow the conventions of English transliteration in widest current use. In the case of place names the accepted modern forms — English, French, Italian, and Spanish — have been employed, as this is usually the most widely known spelling. For the reader's convenience, other forms and names, including those of antiquity, have been provided at the heads of individual geographic entries.

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Illustrations: 14 figs. in text.

AFRICAN CULTURES. The arts in the various African cultures are treated, complete with bibliography and illustrations, under the several headings referred to in the *General view* (see below). This article is concerned only in a preliminary and introductory way with the common background of the various subjects and with some historical and critical problems of a general character.

SUMMARY. General view of the African cultures (col. 130). Definitions and problems (col. 131): *Forms of tribal art in Africa; History of the appreciation of African art; Historical problems; Geographical distribution of African sculpture; Esthetic values in African art.*

GENERAL VIEW OF THE AFRICAN CULTURES. The indigenous arts of Africa, like those of other continents (Australia perhaps excepted) are the products of heterogeneous surroundings, not only in the physical sense but ethnically and culturally. The fact that so little is known about the history of the continent and, further, that there is a general lack of authoritative modern art criticism with respect to these regions makes the subject so difficult that in most histories of art it is treated in a perfunctory manner. This is particularly true of the productions of Negro Africa, which as a result of European colonization has passed quickly from a prehistoric stage of life to its present phase of political and economic development — and, it may be added, artistic decadence. These productions are known almost entirely in this contemporary phase, and it is impossible to judge them in the same way as, say, Asiatic art, which has an understood perspective established with some chronological certainty.

First in the order of time comes the complex of artistic phenomena, still incompletely known, which goes by the name of "Saharan cliff art." But even here the chronology must be set with caution. The Saharan pictures and incised reliefs come down through millennia to historic times; in their first phase they may be contemporary with or even older than the art of the east coast of Spain. The region in which this art is found extends from the Atlantic to the valley of the Nile and from the Sudan to Nigeria in the west and to the Great Lakes and beyond in the east. Diverse as are the styles and the types depicted in such an immensely wide area, yet they can all be treated as "prehistoric" in the sense that the ethnic origin of the artists, even of the obviously more recent works, remains unknown. The attribution of the whole of this art to a culture of hunters of the European-African steppe is only an expedient to mask our uncertainty, although it is not unreasonable to think of the bearers of this art as white nomads, whose traces can be found as far as the eastern tablelands and are finally lost in the late manifestations of cliff art in the south, not all of which is attributable to the ancestors of the present Bushmen (see PALEO-AFRICAN CULTURES). Although this art reached the borders of Egypt during the dynastic period and even later, it shows singularly little contact with high Egyptian art, with which it was partly contemporary (see EGYPTIAN ART). This fact once more proves the unique position and singular isolation of Egypt in the general African cultural scheme. The deep gulf between the world of this northern cliff art and that of the native inhabitants of the same regions in historic times is undeniable. These later people were strangely indifferent to the figurative arts, a fact which cannot be entirely explained by the iconoclastic strictures imposed on them by Islam (see SAHARAN-BERBER CULTURES).

On the east slope of the continent at least three main migratory waves introduced Asiatic racial elements from both the Near and Far East which were subjected in their turn to a more or less complete Africanization. On the tracks of the pastoral Cushite people, whose passionate care of herds of cattle seems

to have precluded all artistic interests (see CUSHITE CULTURES), came the South Arabian conquerors. They brought to the Ethiopian uplands a new civilization acquainted with writing and with wall construction and possessing a technical knowledge that was advanced in comparison with the African, though modest in relation to the earlier Egyptian. The early adoption of Christianity and an uninterrupted cultural exchange with the Near East lent to this highly localized and circumscribed civilization an unmistakable air in the African world (see ETHIOPIA). Other migratory and commercial currents of mixed Asiatic origin (Arab-Indian-Persian) gave to the east coast of the continent from Somaliland to Mozambique a rather particular orientalized tone, especially in the Middle Ages (see AZANIAN ART).

In the absence of external or internal unifying influences, the various cultures of Negro Africa present a rather fragmented and complex picture. Historical-critical research on the art of the Negroes has resulted in partially distinguishing and evaluating an almost numberless series of local and tribal styles without providing suitable classifications. Ecological, ethnological, and wherever possible, historical criteria have to fill a deficiency of esthetic-critical evaluation and serve as a provisional guide. The large divisions into which the arts are grouped here are familiar to ethnologists, but each represents a "unity" only in a conventional sense. The absence of any real unity is evident from the extreme ethnic and linguistic fragmentation of that wide and uniform zone of steppe and savannah where the "true" Negroes live, i.e., in the Sudan. Unity is perhaps only to be found in the "paleo-Sudanese" substratum of sedentary cultivators of the soil living in a patriarchal way behind a façade of more or less ephemeral empires and rival feudal states, a substratum which did not feel the innovating effect of the old trans-Saharan trade or the power of Islam, though the latter had been active since the time of the Almoravids and the Almohads. That symbolic and abstract character which informs such a great part of Sudanese art should perhaps be connected with this substratum (see SUDANESE CULTURES).

Bordering on the Sudan, two other widely extended cultural zones are identifiable. In the west there is an "Atlantic" strip inhabited by the Guinean people, which extends from Senegal to the delta of the Niger and is characterized by tropical forests and by paleo-Negritic forest cultures which frequently reached a high degree of refinement due to a leaven of paleo-Mediterranean and neo-Sudanese. Amid the customary proliferation of local styles this zone saw the rise of such centers of urban art as Benin and Ife, which have no parallel in African Negro art (see GUINEAN CULTURES). East of the Sudan from the frontiers of Kordofan to the Great Lakes lies a region which may be considered a unity. Here there is a relative homogeneity of race and language — the people are Nilotic or Nilo-Hamitic — as well as a negative binding factor, a rare one where African Negroes are concerned, namely, an almost total lack of interest in artistic activity (see NILOTIC CULTURES).

The rest of Africa, from the southeastern borders of Nigeria across the Congo to the Indian Ocean and from Kenya to South Africa, is inhabited by a people belonging to one great linguistic family, the Bantus. In a territory greater in extent than Europe and of an extremely varied geographical character, it is not surprising to find a corresponding variety of cultures and therefore of attitudes toward artistic production. Artistic activity in the Bantu area is principally centered in the central and western zones, but it has proved impossible to relate its successes and failures to specific natural surroundings (forest or savannah), to social order (patriarchal or matriarchal), or, in the absence of historical records of traditions, to any other cultural or political factor. This great region remains in large part to be studied (see BANTU CULTURES). The independent development of certain forms of Negro art on the American continent (see AFRO-AMERICAN ART) is marginal to the above brief outline, but not to be overlooked.

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DEFINITIONS AND PROBLEMS. *Forms of tribal art in Africa.* In seeking to give a compendious account of the arts of African cultures, it is well to begin with a definition of terms. By

"African cultures" is meant primarily the cultures of all the African peoples who dwell south of the Sahara Desert. Thus, except for incidental reference, Egypt, whose arts belong by common consent to the ancient Near East, is excluded; likewise the cultures of North Africa — the coast and the desert — will be passed over on the ground that their art, almost entirely decorative, has belonged for a millennium to the specialized realm of Islamic art. In general, then, the discussion here will deal with the arts of the African Negro peoples (including both the "true" or Sudanese Negroes and the supposedly more mixed Bantu-speaking peoples) and, more briefly, with the non-Negro and mixed peoples who dwell among and beside them, such as the Hamitic, Nilotic and Nilo-Hamitic tribes, the Bushmen, and the Pygmies (although, apart from the more or less ancient Bushmen paintings and engravings, art hardly occurs among these groups).

Consideration here is devoted only to the visual arts, excluding many other manifestations of African artistic impulses such as music and the dance, and primarily to sculpture, as the most characteristic and highly developed form of Negro esthetic expression. Painting occurs sporadically throughout Africa, sometimes in its own right, sometimes as a decorative adjunct to other art forms such as sculpture and architecture. African painting reached its highest expression in the rock art generally attributed to the Bushmen (though it seems to have been practiced, and up to quite recent times, by Bantu-speaking peoples as well). Here again, a great variety of styles is found; all these paintings — which have been found in North Africa, the western Sudan, Nigeria, and Ethiopia, as well as in East and South Africa — seem quite explicable in terms of indigenous African culture, and some scholars reject the recent interpretation of many of the paintings as records of visits by ancient Mediterranean and Middle Eastern peoples. Their age is in any case uncertain.

In addition, some attention will be given to the lesser arts, such as the manufacture of useful objects, the design of textiles, and the enhancement of the body both by modification of its parts (as by scarification and head deformation) and by the use of ornaments.

Lastly, an important qualification of general application must be introduced, namely, that the arts to be dealt with are all "tribal," as opposed to the detribalized or internationalized "tourist art." By "tribal art" is meant traditional art produced by Africans for Africans within the framework of the tribal system of esthetic, intellectual, moral, and social values and institutions. "Tribal" is used here in preference to "primitive," which in common usage has much the same scope, because it is far less ambiguous and more specific, not to mention the fact that it is thought somewhat less offensive by certain African intellectuals. The term "tribal" is especially recommended because art in Africa (unlike that of Europe) is closely integrated and interrelated with the other functions of tribal society, and further because it is possible to generalize about African art styles up to but not above the level of the tribe; there is not, for example, a "Congo Basin style" or a "Nigerian style," since greater variation can be found within such areas than between them.

History of the appreciation of African art. Before African art itself is examined, it is necessary to consider briefly how interest in and appreciation of it arose and developed in Europe and elsewhere. The appreciation of Negro art in terms of absolute esthetic values arose in the first decade of the 20th century; at that time a small group of revolutionary painters (see FAUVES) "discovered" Negro art, but African art was not previously unknown or classed simply as ethnographic material. It would seem, indeed, that the craftsmanship of African carvers was admired even from the earliest days of the European discovery of West Africa. The Portuguese, for example, were most impressed by what they found at the court of Benin, then in its political and artistic prime. The Bini bronze founders even made royal gifts thought fit for the Portuguese king, among them a bronze crucifix. Somewhere on the west coast — not, as was formerly thought, at Benin itself — were found

ivory workers so skillful and adaptable that they were able to carry out Portuguese designs for saltcellars, spoons, forks, and hunting horns, while retaining their African feeling for the nature of ivory and including much African detail, both representational and geometric. These Afro-Portuguese ivories — clearly made for royal and noble tables, since they mostly come to light in the royal cabinets of arts in various European countries — are among the earliest, and certainly the best, of all the products of African "tourist art"; they are probably of 16th-century date, but it is not yet clear whether they were carved at Porto-Novo, Lagos, Loango, or Luanda, or some other African port, or whether Negro ivory carvers were imported into Portugal. What is clear is that they imply at least a Portuguese acceptance of African artistic craftsmanship, even if the resulting art is a compromise between two esthetic worlds.

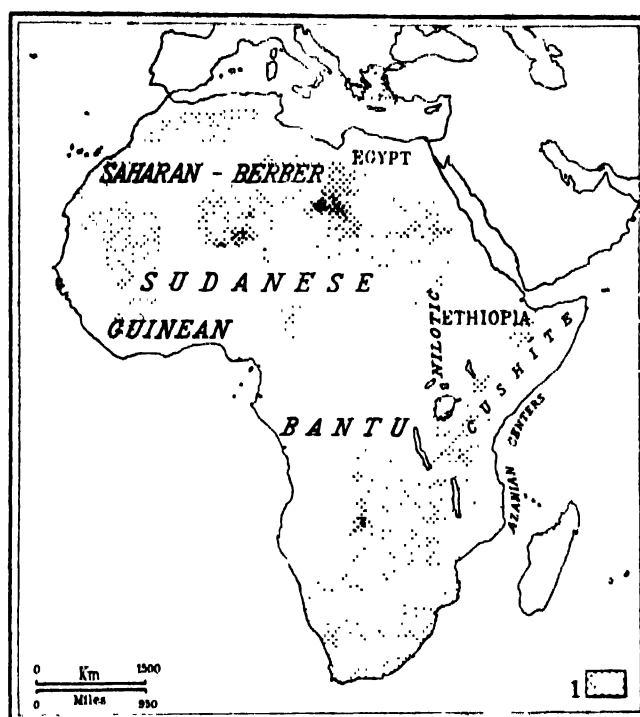
From the 16th century onward, European travelers must often have acquired objects of African tribal artistry, for example in exchanges of gifts with chiefs, but these objects have for the most part either not survived or have lost their identity and they can no longer be called in evidence. But in the 17th century there is some evidence of purposive and well-directed collecting (see MUSEUMS AND COLLECTIONS): in the museum at Ulm in south Germany is preserved the Weickmann collection of West African works of art, including wood and ivory carving from the Yoruba and Fon tribes, and a magnificent cloth, made up of woven squares of raffia cloth with finely embroidered pile, which must certainly have come from the kingdom of Congo and may have been a gift from the king himself; the National Museum at Copenhagen has several more of these large textiles, clearly of the same origin, which are known to have been incorporated in the Danish Royal Cabinet of Arts before 1674. No doubt, a good many such cases could be adduced from this period. By the early 18th century there were many collectors, persons of great sensibility and discrimination, who included works of tribal craftsmanship, acquired from travelers, among their collections of the more orthodox arts of Europe; one of the most eminent of them was Sir Hans Sloane, whose vast collection became in 1753 the foundation of the British Museum. It is unnecessary to quote examples from that golden age of navigation, the second half of the 18th century, when many of the captains were themselves persons of taste and education, although, since the interior of Africa had not yet been opened up, it was natural that, as in the famous Cook collections, the emphasis should still be on the islands of the Pacific.

It was in the 19th century, however, that Africa, as distinct from its coast line, came fully into the purview of students and collectors. Many museums have fine African specimens, obviously chosen with skill, dating from the early years of the century; T. E. Bowdich, author of *A Mission to Ashantee*, collected in 1817, specifically for the British Museum, the finest extant example of a large cloth decorated with stamped designs by the rare *adinkra* technique, and some excellent wood carvings. It was at this time that the science of ethnology was being born out of a combination of different influences, chief among which were the movement for the abolition of slavery, the beginnings of the African missions, and the great interest aroused by travelers' tales and trophies and by the collections of the connoisseurs and museums. Men of esthetic discernment were doubtless as many in proportion to the population as now, and some of them were museum curators; in this capacity it was part of their duty to exercise choice and to make value judgments, and it is quite possible today to assess their choices and judgments from their collections. To take another British example to represent the growing catholicity of European taste, Sir Wollaston Franks, as Keeper of Antiquities in the British Museum, and a man of means as well, used to tour Europe in the 1860s and 1870s in search of choice works of African and other tribal art as well as the classical and other antiquities for which he was equally responsible.

Before the end of the century, the science of ethnology had advanced to the point where firm foundations had been laid, by Haddon, Balfour, and others, for the objective study and analysis of tribal art, more especially in its decorative forms

(which are dominant in much Oceanic art). And while these pioneers (though recognizing and greatly enjoying the esthetic content of tribal art) considered that esthetics must be excluded, at least in the early stages, if scientific method was to be followed, their principles were nevertheless capable of being applied to the study of sculpture, with many potential implications for esthetics. Even in 1895, the German scholar Ernst Grosse, in his treatise *Die Anfänge der Kunst* (*The Beginnings of Art*, New York, 1897), had made some notable contributions to the esthetic study of prehistoric and tribal art.

It is against this historical background that we must see the events which took place in the European art world at the beginning of this century. European artists and art historians had previously taken little interest in tribal art; but, in the *fin de siècle*, a hardly defined exoticism had been growing in the art world, and interest in the primitive life (see EXOTICISM, PRIMITIVISM), though not in primitive art, had a marked effect upon Gauguin, Van Gogh, and others. At last, about 1904, some of the French and German revolutionary artists became



Distribution of African cultures. Locations of rock art are shown by shading (1).

aware of the presence among them, in museum showcases and dealers' galleries, of masks and figures, African and Oceanic, which appeared to have a remarkable affinity with the forms through which these artists were trying to break away from the European tradition in art. Modern criticism makes it clear that these artists drew confidence from this realization in their experimentation with form. Their "discovery" was made possible by the travelers, ethnologists, and curators who had amassed the collections of tribal art. The Benin Expedition of 1897 — that last fling of the old regime under which the accumulation of loot was an honorable practice of war — which brought many thousands of African bronzes to Europe (nearly all of them more remarkable for novelty than for excellence of design or taste), seems to have played an important, if not decisive, part in creating the climate of opinion in which the discovery took place; and this initial and long-continued predilection for work of the Benin decadence was a symptom of the rather uncritical spirit in which the "primitive" was in those days — and in some quarters still is — extolled.

It is evident that the affinities which the modern art movement found between Negro art and its own were largely super-

ficial and masked some fundamental divergences; that while most modern art was revolutionary, an art of protest against academicism, Negro art, on the contrary, is produced in the closest harmony with the cultures or societies of which it is an emanation or expression. To put the matter in another way, while modern art has maintained and intensified the romantic trend that held sway in European art through the 19th century, the art of Africa, on the contrary, may be termed "classical," in relation to the culture from which it sprang.

Thus, the intervention of the modern art movement in advertising Negro art to the world at large has not proved an unmixed blessing for a true historical understanding of the works. The artists and writers concerned were interested in Negro art chiefly as a sanction of the revolutionary esthetic ideas of their own movement. This fundamental distortion was doubtless in most cases not deliberate, but, through ignorance or avoidance of the ethnographical background from which the art cannot be separated in real life, it helped to build up a vague stereotype of a "noble savage" who exists no more in the 20th than he did in the 18th century. The intervention had even more serious negative effects, since it resulted in the virtual cessation of work by ethnologists on the investigation of tribal art. The work of Haddon and others in the analysis of design was not continued or developed as it might have been into the field of sculptural form, and this seems to have been due to the preemption of the field by writers and artists for whom scientific objectivity was merely an obstacle to esthetic speculation. The scientists could find no common ground with them and consequently turned largely to other interests which were to them less suspect. For this growing divergence at a time when collaboration between ethnologists and estheticians was preeminently needed, the ethnologists were largely responsible, for their withdrawal from the field was fainthearted and unnecessary. As anthropological studies have become more specialized in more recent years, there has been less and less room for the study of tribal esthetics (even though one of the leaders of functionalism in anthropology, Bronislaw Malinowski, formed during his field work in the Trobriands one of the finest of Melanesian art collections). Only toward mid-century have a handful of ethnologists begun to carry out the field work upon which sound knowledge of tribal art must be based.

Historical problems. For the European student of African art, nurtured in the esthetics of the Western tradition, it is valuable or even necessary to examine a fundamental difference between these two traditions and the historical reasons which brought it about; for unless he understands the implications of the almost complete isolation of the African traditions (or, indeed, of "primitive" traditions in general) during the past three millennia or more, he may import into his appreciation of African art certain basic, and largely subconscious, assumptions which belong to the esthetics of European civilization.

Our civilization is the outcome of the development of a new kind of culture in and around the eastern Mediterranean basin during the last three millennia B.C. and more especially in the first millennium B.C. This kind of culture is here called "industrial" because of its character as the prototype and origin of the industrial revolutions of modern times; it is marked especially by the appearance of large stone buildings for which primitive building techniques were inadequate. This change seems to have been a function of a philosophical change in man's attitude to the world, an abandonment of the old, dynamic ways of thought in favor of a more static conception of the nature of things. A combination of historical and environmental advantages felicitously present in the region of the Fertile Crescent had made possible the remarkable technological advances of the Neolithic and Bronze Ages (see ASIATIC PROTOHISTORY; ASIA, WEST: ANCIENT ART; EGYPTIAN ART). Of these, some agriculture, the making of pottery, and ironworking spread in due course by way of Egypt into the African continent and became essential elements in Negro culture. But the much more difficult African conditions did not, like those of the Near East, encourage or even permit that further ad-

vancement from practical to theoretical knowledge on which European civilization is founded and which in practice always seems to mean the end of the tribal way of life, because tribal philosophy is unable to maintain its coherence in the face of those phenomena which contradict the belief in a life force. Henceforth the material world must be reduced on paper or its equivalent to three dimensions (instead of four), a circle must be described with a compass, the collapse of buildings must be prevented with plumb line and level and the whole apparatus of geometry. We do not know whether the Africans would have accepted this way of life, or whether they would have been right or wrong had they rejected it, but they did not have the opportunity.

In Negro Africa, almost completely isolated from the Mediterranean world, the idea of the close imitation of nature as an end of art has no more had a place than the idea that a perfect straight line or circle is better than a freehand one; both ideas are equally repugnant to African esthetics as expressed in art.

Whether art developed independently within the African continent or was brought thither by the ancestors of the Negroes (wherever they may have come from), there is at present no means of knowing. Comparison with ancient Egyptian art lends no support to the diffusionist view that Negro sculpture must have developed by degeneration from it; on the contrary, the fact that the affinities of African sculpture are more with pre-dynastic than dynastic Egypt suggests rather that Egyptian art developed from African art under the stimulus of Near Eastern civilization. There are some well-authenticated cases in which particular West African art forms seem to have derived from ancient Egyptian forms (as in the case of the ram-headed aegises found at Benin and in Yorubaland, which are clearly related to the similar aegises of Amen-Ra), but these appear to be isolated cases rather than evidence of major diffusion; they are perhaps not of more far-reaching significance than the survival in the Gold Coast (Ghana) of Coptic and medieval Persian forms that must have traveled by the caravan routes across the Sahara or from the Nile Valley.

The application of historical principles to the study of African art has as yet hardly begun, but it will be useful to give here a brief sketch of the chronological landmarks so far established. By far the earliest art to which a date can be assigned is the terra-cotta sculpture of the ancient culture named after the village of Nok in the Ham (Jaba) country of central Nigeria; the remains consist of heads and other fragments of human and other figures recovered chiefly from tin-bearing alluvial deposits over a wide area of the middle Benue Valley and as far west as the Kadura River, a tributary of the Niger. This widespread art, showing a remarkable esthetic variety within a single well-defined style, was also of long duration, for radiocarbon tests of associated fossil trees show that it lasted from about 900 B.C. to A.D. 200. Clear evidence of the beginnings of siderolithic culture (presumably about 600 B.C. or a little later) is found in association with the sculptures that are, technically and esthetically, of a high order and must have been the product of an appreciable period of development. During the second half of the 1st millennium of the Christian era imposing architecture and some stone sculpture flourished at Zimbabwe in southern Rhodesia, but this remarkable culture, whatever its origins, does not seem to form part of the main stream of African art history. There next appears the splendid art of Ife in the Yoruba country of western Nigeria, and the possibility cannot be excluded that the Nok culture is in some way ancestral to it, whether directly or collaterally. These are probably the only two African cultures which have made life-size human figures in terra cotta; naturalistic treatment of the face and head occurs in both, though far more rarely at Nok, and the bodies are stylized in a somewhat similar manner. There is some internal evidence that the pagans who inhabit the area where the Nok culture has come to light may be descendants of the Nok people, and these pagans are certainly living at a far simpler, more "primitive" level than the modern or, probably, the ancient Yoruba of Ife. It would therefore seem likely that if there was a generic connection

between Nok and Ife, it was of somewhat indirect character. It is possible, for example, that the pottery skills of the Nok people were still more widely spread than is yet known and that the Yoruba, coming in from the east (probably with a command of brass casting), became mixed with the indigenous tribes, with the result that the Ife style was born. The special interest of Ife in relation to African art as a whole lies in the question of whether a style so naturalistic as to be comparable with those of classical Greece and Renaissance Italy could arise independently within the context of West African culture. It becomes increasingly clear that this is the most economical and least extravagant hypothesis. It is not difficult to suppose that in this town, which must from the beginning have lived largely on the dues accruing to it as the ritual center of Yorubaland and the mythical place of the world's creation, there existed a thousand years ago a priestly court whose worldly sophistication rivaled that of Delphi or ancient Egypt. Indeed, Yoruba mythology suggests some interesting parallels with the state of religion in post-Homeric Greece. Many writers have suggested that the Ife heads could have been made only under the influence of an art that had developed through the same stages as Greek art, with the use of mensurational techniques; and to one who looks only at the bronze and terra-cotta heads this is at first sight a plausible view. But it is quickly modified when the whole corpus of terra-cotta fragments is examined, since they exhibit a much greater esthetic variety and show clear links between the naturalistic style and the more "African" examples of stylization. The discovery (November, 1957) of several fine bronze figures proves conclusively that, while the artists were certainly concerned to achieve an idealized naturalism in the modeling of faces (there is no evidence that any of the sculptures are portraits in any true sense), they were in other respects working within the canons of "African," and specifically Yoruba, proportion, since, as in modern Yoruba woodcarving, as much as a third of the total height of a figure is devoted to the head. In the light of these facts, the facial naturalism of the Ife may be reasonably seen as a local specialization within the framework of indigenous art (comparable to items found, for example, on the Cross River in eastern Nigeria or near the mouth of the Congo).

The dating of the art of Ife remains a matter of conjecture supported by surviving tradition. Thus Benin oral history maintains that brass casting was flourishing at Ife about A.D. 1300, when Oba Oguola is supposed to have asked the Oni of Ife to send a teacher of the craft to Benin; and a miniature figure of Ife workmanship, but found at Benin, tends to corroborate this. Early Benin works, thought to date from the late 15th century, show a very clear derivation from the Ife style, although certain elements of stylization suggest an interval of a century or more. Thus the Ife style may have flourished from about A.D. 1000 to 1400; but it is possible that the same style was still practiced there well after the arrival of the Portuguese in the interior. But no progression of style is as yet discernible within the art of Ife, so that it is equally possible that it was all made within one or two centuries.

At about this time other important art centers are known to have existed in that central portion of the art-producing area of Africa between Lake Chad and the coast, in and around what is now Nigeria. One such center, which may have been in Nupe or Igala country, seems to have produced most of the famous brass figures of Jebba and Tada on the middle Niger (though the most striking of them, the seated figure of Tada, seems to be in the Ife style), as well as a number of other fine works which cannot be fitted into the artistic canons of Ife or Benin; a number of such pieces found at Benin are clearly extraneous to the Benin succession and must have been imported. The medieval center may have been at Kwororofa, the capital, now abandoned, of the old Jukun empire in the Benue Valley; nothing is known of its art except what can be deduced from recent Jukun and Tiv work, but its influence might well account for many bronze or brass objects, found in eastern and northern Nigeria and perhaps the Cameroons, in which there is strong emphasis on surface decoration — among them the Igbo hoard found near Awka in Ibo country.

Still farther to the northeast by the waters of Lake Chad, there already flourished the remarkable art of the Sao empire. This provides the only case so far established in West Africa of the use of true bronze (tin bronze as distinct from brass) before contact with Europeans, and the decorative style employed may prove to have affinities with that of the Jukun. The characteristic Sao terra cottas are perhaps related to the ritual pottery of certain pagan tribes of northern Nigeria.

There is better scope for the methods of art history in the massive output of the bronze founders of Benin from about A.D. 1500 to 1900, amounting to about a thousand known specimens. Unfortunately, the interpretation of Benin chronology propounded by F. von Luschan and later systematized by his pupil B. Struck must be abandoned. In its illustrative and purely descriptive aspects von Luschan's *Altertümer von Benin* is still indispensable as a source book; but, in spite of the appearance of definitive precision to which it owed its long undisputed authority among European scholars, his scheme for Benin art history proves on close examination to be founded largely on unsupported conjecture which has not only failed to stand the test of recent study in the field but was often at variance with the facts before him. Excluding from the Benin canon those numerous pieces which belong to separate traditions — and these pieces, many of them of highly imaginative conception, provide some of the most interesting problems awaiting research — it is fairly easy to arrange the bronzes of the orthodox court style of Benin in a stylistic sequence that accords generally with the evidence of traditional history (though precise datings such as von Luschan laid down are impossible), and demonstrates clearly the continuous decay of sensibility and artistic vision from the Ife-influenced early heads through the impressive, though rather stolid, plaques and round sculptures of the middle period, to the grotesquely gross and flamboyant works of the 19th-century decadence. While the case of Benin is certainly unique in African art, it clearly exemplifies a court style devoted chiefly to the glorification of the kings and more or less independent of the tribal style of the ordinary people (which among the Bini seems to have been closer to the pleasingly rustic wood-carving styles of the other Edo-speaking tribes than to the greater sophistication of Yoruba art). Partial parallels may be found among the Ashanti of Ghana and the Fon of Dahomey. The special feature of Benin art history is the nature of the transmutation undergone by the alien and exceptionally sophisticated esthetic of Ife in the hands of successive Bini craftsmen who perhaps never wholly understood it and who, as the humanistic impulse weakened, were rarely able to replace it by any of that dynamistic inspiration that is more generally characteristic of Negro sculpture.

The diachronic study of African art is largely dependent on the survival of works in durable materials such as bronze and terra cotta, and these have chiefly come to light in the Nigerian area. Wood, the most characteristic medium of the Negro artist, is highly perishable in tropical Africa, eighty years being an exceptional span of life for a carving. Nevertheless, there is one area, that of the Bakuba or Bushongo tribe in the southwest Belgian Congo, where the art is open to some extent to historical treatment. Oral traditions supposedly dating back to about A.D. 500 are certainly not reliable for more than the past four centuries and then only partially and in respect to the ruling circles (for the Bakuba kingdom is a stratified society with divine kingship, much like the medieval empires of the Guinea coast). Many surviving carvings and some textiles are attributed to particular reigns in the past two or three centuries; the most important are the famous royal statues said to be contemporary portraits of named kings from Shamba Bolongongo (ca. 1600) onward, one of which is said to represent a king's son of the mid-16th century. Actually it is doubtful whether any of these statues is much more than 200 years old, but it is possible to discern the stylistic changes between about 1800 and 1915 (since when they have been made chiefly for Europeans). The culture of the Bakuba kingdom has, further, a special importance for the student of African history, because it has preserved in unbroken tradition influences which seem to derive from real contact, direct or indirect, with the old

kingdom of Congo. The geometrical patterns, probably of textile origin, are frequently identical. In this case there has been little degeneration of style (at least until the "tourist" age), perhaps because the Bakuba kingdom, unlike the Benin, Abomey, and Kumasi, which were largely war-oriented, fostered less materialistic values among its carvers and their patrons and allowed a greater integration or assimilation of the court and popular styles.

With this exception, it is in general true that the innumerable wood-carving styles making up the main body of African art are the end products of long traditions whose earlier course cannot, with our present knowledge, be estimated.

Geographical distribution of African sculpture. The sculpture-producing area of Africa comprises, roughly, the two great river systems of the Niger and the Congo. Within the perimeter formed by the Sahara Desert, the Great Lakes, the middle Zambesi, and the Kalahari Desert there are rather few tribes entirely without sculpture. Outside it there are extremely few who have any, and those few (such as the Makonde) may owe it to some former relationship with tribes inside the area. This remarkable dichotomy is not to be explained on a social or linguistic basis, for about half the area is occupied by the Bantu speakers, while about half the Bantu area is occupied by sculpture producers. Nor is there any evidence that the incidence of artistic genius or skill is greater in the art area than in the east and south. It is probable that historical and cultural factors are the true explanation. The nucleus of the area is formed by the relatively fertile rain forest, and the population is predominantly agricultural and therefore has been settled in most cases for many centuries, a condition which is more conducive to the growth of plastic art than the nomadic or pastoral life of most of the eastern and southern African peoples (as also of the Fulah of West Africa and the Congo Pygmies, who, of course, are without sculpture). Furthermore, and partly for the same reasons, displacements of population through war or famine (with consequent disruption of traditional life) have been far commoner east of the lakes than to the west, where the defeat and subjugation of a tribe often meant the acceptance of a foreign dynasty, and perhaps of an aristocracy, rather than a large-scale move to new territory.

Within the Niger-Congo area it is less easy to discover lines of cleavage. For the practical purpose of describing the arts of a vast number of tribes, it becomes necessary to introduce arbitrary divisions, for example into "Sudan," "Guinea Coast," or "Bantu"; but in fact there is much greater difference of style and esthetic within areas than between them. The lines of demarcation between the large areas are often geographical or linguistic rather than cultural. The Bantu-speaking pagan tribes on the north Nigerian plateau have essentially the same culture as the Sudanic speakers with whom they are in symbiosis. Again there is no clear division even between the arts of the Guinea forest belt and of the savannah. While the Dogon and Bambara or the western Sudan favor severe, almost skeletal forms in their sculpture, it is possible to parallel these same forms in the mangrove swamps of the Niger Delta and in the Congo. The art of the large Senegal tribe is as much of the Guinea coast as of the Sudan. The art styles of Africa are probably the most varied to be found in any large area of the world: neighboring styles may be, in an esthetic sense, almost diametrically opposed (as, for instance, those of the Dan and Egere, the Fang and Bakota, or the Baluba and Basongo), and even close similarities may be without causal significance (for example, certain masks of the Makondo of the Mozambique coast are most closely paralleled in the Gelede masks of the Yoruba). In short, the astonishing diversity of African arts appears as a function of a large unity.

Esthetic values in African art. It is often suggested that African tribal art corresponds to the folk art of Europe. This analogy is a false one, based on a misunderstanding of the nature of both. Folk art is, by nature and definition, only one half of a dichotomy characteristic of "advanced" civilization: that between "fine" art, the art and applied art, including fur-

niture, of the upper or moneyed classes, whose mark is sophistication, and on the other hand the "folk" arts and crafts, practiced chiefly by the rural population, which by comparison are characterized by a certain naïveté and are found to be in large part derived after a time lag of a century or more from the art of the upper stratum. The folk artist is always aware of the existence of this higher art and, if he shows exceptional skill, is likely to be attracted into the ranks of the urban craftsmen. This dualism, while especially characteristic of European civilization (and perhaps an aspect of the progressive compartmentalization of culture that tends to occur in civilized societies), is also to be found, for example, in Indian and Chinese civilization; but it does not occur in Negro Africa except, perhaps, in a very rudimentary form, at Benin and one or two other places where a court style differs from the popular or tribal styles.

But if we can consider the "folk" concept only to dismiss it, it will be profitable to examine African sculpture in terms of another European duality—that of the "classical" and "romantic" trends in art. "Classical" in this sense has nothing to do with naturalism in the Greek and Roman tradition but means "of admitted value," and is used of art which is readily susceptible of classification, being concerned with communication in a common "language." In this sense African art may be said to be "classical." In romantic art, on the other hand, the artist is concerned to express his individual and personal vision, to use it as a medium of self-differentiation, and to insist on its artistic validity. Unrestricted romanticism occurs in Africa only as a rare exception (e.g., in the case of a young Ijo carver who, instead of conforming to the somewhat rigid tribal style, carves unique masks derived from his own dream experiences). It is not true, as is often thought, that tradition is so strong in African art as to deprive the artist of all initiative or of any merit above that of a copyist. While the discernible regularities enable us, as Olbrechts has brilliantly shown, to determine the common style of a tribe or a subtribe, it is equally possible to distinguish the work of a village, of a workshop or family, and finally of an individual carver. Many masters of the past half-century or even more can still be easily traced by the field worker and their *oeuvre* documented both in the field and in European and American collections. The truth is that while the force of tradition is strong, laying down in most cases the subject matter of sculpture and also certain obligatory elements of stylization, such restrictions do not inhibit the artist's talent or genius but rather concentrate it within an accepted mold, in which there is plenty of room for creative idiosyncrasy. The situation is in general one of equilibrium between the tendencies of conformity and individualism.

African art may be characterized as "poetic" and direct, rather than descriptive or narrative, conveying emotion by the direct method through line, form, color, and surface, without the interposition of verbalized or intellectualized concepts.

The unparalleled versatility of the African esthetic is in strong contrast to its unity of motivation. The variety of African styles ranges from the extreme of abstraction (for example in the *akumaga* masks of the Jukun of northern Nigeria) to virtually complete naturalism (as in the Ife bronze and terracotta heads, in the articulated wooden "second-burial" figures of the Yoruba town of Owo, or in many of the skin-covered heads of the Cross River tribes); but the stylistic variety is not merely a kind of linear progression between these two poles, for almost every conceivable permutation of form seems to have been explored in one tribe or another. This esthetic versatility is doubtless a function of tribalism, in which art, religion, language, and culture in general form the apparatus of differentiation of the tribal group from its neighbors and potential enemies; it is not known whether this variety has developed from an original homogeneity by a continuous process of fission, and occasional fusion, through the centuries.

Consideration of the unifying factor in African esthetics is necessarily conjectural, since we have little direct knowledge of the motivation of the artists. To the European it may seem that the purpose of a work of art is irrelevant to its esthetic value, but in the tribal world function and form seem to be

fused in a single philosophical concept, that of increase, or fertility in the most general sense. Two facts appear to justify this view: first, the prevalence in all or most parts of tribal Africa of a dynamistic belief in immanent force or energy present in all beings and things and subject to fluctuations which can to some extent be controlled by man; and second, the persistent appearance in the art forms of curves and other elements related to those observed in the growth of animals or their excrescences, as well as the constant use in religious observance of actual animal horns and tusks, shells, and other natural manifestations of the exponential principle of growth. In this philosophy of the life force are integrated and reconciled the cults of the gods and of the ancestors and the impersonal or "fetishistic" cults by which man directly controls nature; and it is to the promotion of tribal and individual increase that the innumerable secret societies and cults of Negro Africa — art's chief patrons — are dedicated.

For bibliography, see the articles referred to in the preceding text.

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Illustration: 1 fig. in text.

AFRICAN-ROMAN ART. The civilization that flourished with signal and characteristic vigor in the Roman North African provinces to the west of Cirenaica (see *AFRICA, NORTH*) produced art of great interest. On the one hand it seems to be linked, more closely than in other areas, to the official art of the empire (see *ROMAN IMPERIAL ART*); on the other hand it manifests unique qualities indicating that previous cultural traditions and local patterns of life exercised a strong and lasting influence.

SUMMARY. Historical background (col. 141). Punic-Numidian folk art (col. 142). Monumental and official art (col. 143). Mosaics (col. 144). Minor arts (col. 148).

HISTORICAL BACKGROUND. With the annexation in 146 B.C. of the Carthaginian territories, Rome incorporated for the first time a country profoundly marked by Semitic civilization (see *PHOENICIAN-PUNIC ART*). To the victorious Romans this civilization was bound to appear barbaric and contemptible, and as far as the arts are concerned, this reaction would seem justified, for the Carthaginians had, in fact, never been artists: nature neither attracted nor interested them, and the human body, like the human individual, seemed of little worth. The art objects imported from Egypt, and later from Greece, were valued only for religious or commercial reasons, and when they were copied locally, the coarseness of the imitations betrayed a total lack of artistic comprehension. Only the priests had made any attempt at art, seeking forms to express their theological concepts; but to them highly abstract signs seemed most appropriate to convey the ineffable majesty of the divine, and the human figure itself was reduced to a symbol.

For a century, Africa was to remain for the Romans an area for exploitation pure and simple. In the free cities, where the elite soon began to collaborate with their masters and to conform to Roman ways of thinking, Punic symbolism degenerated and seemed doomed to rapid extinction. The rural population, however, clung to the old beliefs, and in their sanctuaries (haphazard clusters of courtyards, altars, and chapels) they accumulated terra-cotta figurines based on Greek prototypes of archaic as well as classic and Hellenistic style, which had come by way of Carthage.

Meanwhile the Numidian kings, who had remained independent, assumed the role of patrons of the arts. They attracted Greek craftsmen as well as groups from the Libyo-Phoenician middle classes to their new urban centers, and this contact brought about a reawakening of the Libyan artistic genius, dormant since prehistoric times. The interaction of these three ethnic elements is evident in the sepulchral monuments of kings and aristocrats — the tomb known as "the Medracen" near Batna, the so-called "Tomb of the Christian Woman" (PL. 18) at Tipasa, the Mausoleum of Thugga (modern Dougga), and the Souma of

Krouba (PL. 18). The Kbor Klib, a monumental altar near Zama, testifies, on the other hand, to a stronger Greek influence. The last of the Massyli kings, Juba II, who was transferred to Mauretania by Augustus in A.D. 25, transformed his capital cities, Caesarea (modern Cherchel) and Volubilis, into veritable showcases of art treasures.

PUNIC-NUMIDIAN FOLK ART. The profoundly religious inspiration of this art derives from Punic theology enriched by Greek philosophy. The most important works consist of funerary or votive steles usually decorated in flat relief. In the 1st century, while the votive monuments were poorly decorated, the funerary sculpture represented the human figure in a form that was conventional but not lacking in strength: this is evidenced in a stele of a priestess of Ceres (PL. 19), divided horizontally into tiers, which was found in the neighborhood of Maktar. In this instance, the body is neglected in a way that emphasizes the face, dominated by enlarged eyes, and also the clothing, which here consists of a wide, pleated Greek robe. In other steles the garb is highly complicated, consisting of a sort of surcoat over an embroidered tunic, but in no case does it reveal the seemingly atrophied limbs. This conception of anatomy, which is found also in the ceramic statues of rural sanctuaries, serves as an indication of chronology. The arrangement of the secondary elements, animals or objects, is governed essentially by decorative considerations; thus, in the stele illustrated, the two large serpents face each other with heraldic symmetry on each side of the citharus. Attempts to render space are rare in this period, with the exception of sacrificial scenes influenced by Roman art; however, a cippus from Gales representing a sacred banquet offers a curious bird's-eye view. The excavations at Maktar have yielded some original sculptural fragments of the same period, the best of which, such as the head of a helmeted goddess and some powerful leonine statues, still bear witness to Greek inspiration.

In the 2d century Punic-Numidian art, already threatened by the expansion of the classic style, reached its peak in the great steles of Ghorfa (PL. 19), ex-voto offerings in which an entire theology and cosmology found expression. The influence of the Latin civilization can be detected in respect to the gods represented, the classic architecture of the temple that forms the basis of the design, the toga worn by the donors, and in a few cases by inscriptions. However, these Roman characteristics are superficial. The technique is still primarily that of flat relief (though donors are executed in half relief), and the influence of goldsmithery is apparent in the gilt nails studding the upper part of the monument in simulation of the starlit sky.

In composition these steles have an illogical exuberance as far from Punic rigidity as it is from the humanist order of the Greeks. The donor, admitted by his offering to the community of the faithful, is shown seated in the temple. Symbolically, the temple belongs both to the tangible world and to the supernatural cosmos. The statues that serve as its acroteria depict the chthonian deities Bacchus and Venus, the intermediaries between humanity and the inaccessible divine majesty. Thus, in the composition, they penetrate the celestial world, where astral bodies, vegetation, animals, and supernatural beings are mingled with an air of intense liveliness. The supreme being, symbolized by a head encircled with a crown or with a knotted serpent, is situated at the top of the stele, which represents the highest sphere of the universe. Inversely, the crypt of the temple may be depicted at the bottom, as if reaching down into the infernal regions, which are peopled also with spirits such as Hercules and a crouching god holding two serpents.

From the Antonine period the stonemasons tended to apply classic esthetic rules to the ex-votos and the tombs, a break marked by the abandonment of flat relief in favor of half relief for the principal figures and low relief for the others. Steles dedicated to Saturn and funerary cippi showing the deceased in Roman dress have been found in almost all the African sites, at times in considerable quantities; among them are some expressive portraits and instances of skillful decorative treat-

ment. One of the latest and most interesting discoveries is the Boglio stele found in the territory of ancient Zama Regia, a highly characteristic example related in composition and anatomical treatment both to the official monuments and to contemporary mosaics.

These monuments catered to urban and upper-class tastes. Meanwhile the workshops continued to furnish the masses, less exposed to the classical influence, with steles of poor quality which demonstrate the decline of Punic culture. In the first half of the 3d century popular sculpture died out in the Tell, but among the desert tribes its vitality remained unbroken until the 4th century, as evidenced by the mausoleums of Ghirza (PL. 20), which still show flat-relief decoration (PL. 21).

Popular art was produced, as the foregoing suggests, almost exclusively for private clients. However, in this category there are some official monuments such as the *Mars* of Maktar, of the Flavian period, and a curious triumphal relief now in the Musée du Bardo, showing a Greco-Roman horseman overpowering a barbarian.

MONUMENTAL AND OFFICIAL ART. After the end of the first century a magnificent flowering of monumental art occurred in this part of Africa. (See AFRICA, NORTH under *The Romans* for a discussion of the architecture).

Official sculpture appears to have been at first an imported art. There is nothing African in the bronze trophy of Hippo, in the two imperial cult altars from Augustinian Carthage, nor in the Julio-Claudian portraits from the old forum in Leptis. Under the Flavians, and even as late as the Antonines, most of the imperial portraits, such as those of Titus and Domitian in armor, from Sabrata, and the mailed figures of the Hadrian period from Ammoedara, were ordered from workshops in Italy or from the Orient.

However, some of the sculptors established in Carthage and in the principal cities gained sufficient prestige in the 2d century to sign their works. Among them were Cornelius Saturninus, who may have executed the famous magical ebony figurine of Mercury for Apuleius, and L. Plotius Clemens, who was responsible for the statue of Minerva from Hippo which was discovered in the Baths of Caracalla. It is exceedingly difficult to distinguish between the works of these artists and those that were imported. African origin can be regarded as certain, however, for limestone herms, found in the Baths of Antoninus in Carthage, representing a Negro and a Berber. And Carthaginian sculptors doubtless executed the Victories, shown holding a trophy or a cornucopia, for a monument on St. Louis' hill commemorating the victory of Lucius Verus over the Parthians.

During the Flavian period the baroque style which at that time enjoyed a universal vogue was introduced by artists from Rome or, more probably, from the Orient. The fantastic quality in this art found a ready echo in African taste, so much so that the classicist reaction that set in under Hadrian scarcely made itself felt—a fact demonstrated by the extraordinary anguished capitals in the Baths of Antoninus, which were built between 145 and 162.

From the beginning of the reign of Marcus Aurelius, an extraordinarily popular decorative motif in central Tunisia was the foliage scroll, or rinceau, interwoven with fantastic figures. A soffit thus decorated in the baths at Maktar, built in 170, shows the monsterlike servants of the patron gods of the city, the centaur of Liber and the griffin of Apollo, engaged in violent struggle and then reconciled through the intervention of the Capitoline triad; the scene symbolizes the elevation of the city to the status of colony. A similar inspiration transforms the usual traditions of triumphal art on the tetrapylon of Oea (Tripoli), dedicated in 163; in this fantastic composition the patron gods of the city (Apollo and Minerva) are again assigned a dramatic role, rushing to the rescue of the Roman army in chariots drawn by griffins. The African artists were thus prepared progressively for the great commissions entrusted to them later in Leptis, no doubt guided by contact with artists from abroad, notably the sculptors from Aphrodisias.

The sculptures of the Severan period in Leptis decorated the tetrapylon, dedicated in 203, as well as the basilica and the forum, completed in 216, the first exemplifying triumphal art. The latter two, in the category of decorative art, mark the end of an evolution that had started a century before. On two pilasters of the basilica the principal episodes in the myths of Hercules and Bacchus are shown within the interlacing of two vines issuing from the same crater. This work is linked with the Maktar reliefs, through the use of the foliage scroll and the exaltation of the city's patron gods, as well as with the mosaics of the house of Asinius Rufinus at Acholla (see below) depicting the labors of Hercules. On other pilasters of the same basilica and in the frieze decorating the porticoes of the forum, protomas may be seen rising out of vegetal corollas, motifs already used in sunken panels on the cornice of the Temple of Apollo at Maktar, built at the beginning of the 2d century.

The sculptures of the tetrapylon—the Victories on the arch and the Victories and Gorgons on the western portal—again emphasize the romantic and pathetic tendencies evident in the Aurelian Nikes from Carthage. The panels that sheathe the pillars and the large friezes crowning the attic represent historical scenes, a field in which, quite logically, influences from Italy predominated. The frontal composition, showing the figures averted from the action in which they are engaged and facing the spectator like elements in a decoration, is reminiscent of religious reliefs, votive stelae, and mosaic influences; the absence of an effect of depth is also typical of African art.

Thus, the Severan art of Tripolitania was the culminating product of local artists who, as early as the middle of the 2d century, had evolved their own esthetic style—under the influence of Egypt and Syria but inspired, above all, by the old Punic and Numidian traditions that radiated from Carthage. The collapse of African prosperity after 235 and the spiritual crisis which for a time interrupted the inspiration of official art rapidly put an end to this development. In the latter half of the 3d century the sculptors limited their activity almost exclusively to portrait art and produced such works as the *Gordianus I* in the Musée du Bardo and the *Hercules* of Massicault. The last products of African-Roman sculpture are the portraits made during the final years of Constantine and in the time of his son; they include some masterpieces, such as the portrait of Helena and especially that of Constantius II, but this school exhibits no local character.

MOSAICS. The Punic people, quick to imitate Hellenic fashions during the last centuries of their independence, made widespread use of cement flooring encrusted with tesserae of marble. These are, without doubt, the *pavimenta punica* which Cato noted as having been adopted in Rome toward the middle of the 2d century B.C. But the first group of mosaics demonstrating the full mastery of the African tessellation artists are those which were found in Zliten (ancient Subgoli) in the easternmost part of Tripolitania (PL. 22); they may be assigned, on the basis of style, to the Flavian period in the latter half of the 1st century, though there is some disagreement in the matter of dating. Although this find occurred on what was the frontier of the Greek and Latin world, the art in general seems to have developed more under Oriental than under Italian influences. The black-figured pavements produced in Italy in the 2d century were rare in Africa, while Egypt was the evident source of the "Nile landscapes" (PL. 23), such as those discovered in Bizacena, at El Alia and Hadrumetum (modern Sousse). The latter are treated in an impressionistic style very close to that of Zliten.

Another site in the same region, Acholla, makes it possible to follow the evolution of mosaic art during the 2d century, because of the known chronological sequence of the buildings. One of the houses, belonging to Asinius Rufinus, a consul in 184, can be dated in that year by the *Hercules* holding the place of honor in the oecus, which is identical with the type found on contemporary imperial coins. The neighboring *thermae* contain a pavement certainly inspired by Pompeian Style IV. The entrance hall of the frigidarium is entirely decorated with Dionysiac scenes having the Indian victory of Bacchus as

their central theme. The triumphal theme evidently commemorates an Oriental expedition, which must have been that of Trajan, and the date 115-20 is corroborated by the style of the nonfigural flooring. This pavement shows a geometric pattern of thin black lines on a white background, highlighted by polychrome peltae or simple interlace or by delicate wreaths of foliage — a floral style encountered subsequently in Hadrian's Villa near Rome.

The other groups of mosaics at Acholla can be placed chronologically between these two. The villa of the *Triumph of Neptune* must belong to the period of Antoninus Pius, since the flooring of the oecus recalls the stucco decoration of the tomb of the Valerii in Rome, dated 159. To the same school belongs another *Triumph of Neptune*, from La Chebba, as well as the *Nereids* of Thugga, the marine *Thiasos* of Lambaesis, signed in Greek by Aspasios, and finally the great Dionysiac mosaic of Cuicul (modern Djemila). This is also the period of the principal mosaics of Oudna: the *Visit to Icarus*; a large pastoral composition, in which realistic scenes such as the netting of partridges are curiously introduced into conventional themes; the panther hunt, and above all, the wild-boar hunt, where the *dominus*, or master, is depicted as Meleager to emphasize his prowess. The nonfigural ornamentation is substantially the same as that of the preceding period; the delicacy of the motifs provides an ample white background, and the floral arabesques, with increasing use of complex florets, offset the severe geometric combinations of straight lines.

The era of Marcus Aurelius lacks such definite chronological landmarks, but the subterranean house of *Amphitrite* at Bulla Regia may be attributed to that period, as well as several "megalographies": the Isiac procession known as the *diffa* of Carthage; the *Forge of Hephaestus* of Thugga, from the *thermae* adjacent to the house of the *Nereids*; and the house of Sorothus in Hadrumetum. In the oecus of this house a *Triumph of Neptune*, encircled by medallions depicting sea gods, resembles the same subject at Acholla though it is later by several years.

Recurrence of an impressionism somewhat close to the Flavian style is evident in the oecus of the house of Asinius Rufinus, dated (see above) in 184, as well as an elaboration of the floral ornament to the point of almost obliterating the background. The general scheme is identical with that of two mosaics consecrated to the Muses, one from Thydrus (modern El Djem), and the other from Leptis Minor. Another mosaic from Thydrus features the victory of Apollo over Marsyas, and several floorings have medallions showing *xenia* or, in exceptional cases, scenes from everyday life.

For the period of Septimius Severus, the following groups of mosaics are listed in the most probable chronological order: the house of the *Aviary* at Carthage; the *thermae* of Chott Maria; the agricultural scenes (PL. 24) of Caesarea (Cherchel); the fancy-dress banquet of El Djem; the large hunting scenes of Carthage and Sicca; and finally the house of the *Vergil* at Hadrumetum. This last may be considered the most important both because of interest in the portrait of the poet and because of the diversity of styles in the pavements. This is a period of transition, and reminiscences of the past appear side by side with attempts at new forms. The portrait of the poet, together with a mutilated scene possibly depicting the parting of Dido and Aeneas, decorated a kind of tablinum, while the adjoining atrium contained a motif already encountered in the 2d century — peacock feathers and water lilies emerging from craters. The oecus was decorated with medallions, of which the principal one pictured the abduction of Ganymede, and nearby were found a Dionysiac procession, a fishing scene, and an apse featuring *xenia*. The dating of the entire house can be deduced from the *Dionysiac Triumph* (PL. 25), for at first sight its inspiration — hieratic and already Byzantine — seems opposed to that of the same subject at Acholla. The fact is that this mosaic copies the relief on the tetrapylon of Leptis commemorating the triumph of Septimius Severus, and the points of resemblance are so exact that these two works could not have been separated by great length of time; therefore, the house at Hadrumetum, while necessarily

later than 203, must have been built before the death of Septimius Severus in 211.

Late Severan art is exemplified by the baths of the *Poet*, recently excavated at Sfax. The main pavement represents a Roman writer (possibly Ennius) inspired by Clio, in the midst of the other eight Muses. In an adjacent work, a hexagonal medallion frames a drunken Herakles supported by a satyr; in inspiration this work is definitely similar to the *Vergil* of Hadrumetum, but the faces have a sullen expression, produced by the exaggerated closeness of the eyes and the fixed stare, a characteristic found also in the Dionysiac medallions of a house in Volubilis. Four mosaics consecrated to the Muses in Hadrumetum are related to the composition of the *Poet*; one of them, showing Apollo with the daughters of Memory, follows exactly the same scheme.

The hunting scene of Cincari, attributed to the same period, shows analogies of composition with the fancy-dress banquet of Thydrus. This work seems to have been the point of departure for a series of hunting scenes, including a boar hunt at Carthage, still imbued with Severan characteristics, and some coursing scenes found at Thydrus, Thuburbo Majus, and Oudna, which closely resemble one another and probably originated successively during the latter half of the century. The hunting scene from Thydrus (PL. 26), which seems to be the oldest of the lot, was in a house which also contained a *Dionysiac Triumph*, obviously derived from the one in the house of the *Vergil* and related to a mosaic of Caesarea. Maritime subjects are equally well represented in this period by the large compositions of Althiburos (a catalogue of small craft) accompanied by nonfigural floorings somewhat in the style of the *thermae* of Sfax. Thus one becomes conscious of a gradual impoverishment of the repertory, with recurring themes which remained popular until the end of the century. Human and animal figures, as well as naturalistic details, were reduced more and more to decorative or symbolic motifs. This was followed rapidly by the complete disappearance of any effort to render space and loss of the sense of proportion.

After the close of the 2d century, the choice of subjects was more and more influenced by religious preoccupations or, at least, by superstitious beliefs: to innumerable phylacteries are added the images of protective deities, among whom the most popular were Venus and Bacchus. Already, under the Antonines, the interest in astrology had inspired the mosaic of Bir Chana, depicting the gods of the week and the signs of the zodiac; now the genius of the year often appears holding the circle of the zodiac, for instance in a mosaic of Hippo in which the Seasons are coiled like Julia Domna.

The latter half of the 3d century is less well known. The *Crowning of Venus* of Elles can be dated in the reign of Gallienus, on the basis of the coiffure. Here there appears for the first time a static quality, an almost heraldic frontality, in contrast to the dynamism of the preceding period. Similarly, the triumphal monuments of the tetrarchic period show a departure from the violent pathos of the Severan monuments. This hieratic trend becomes apparent in a great many African mosaics. One of the most characteristic is the *Triumph of Neptune and Amphitrite* discovered at Constantine (ancient Cirta) and now in the Louvre (PL. 28), which, through its rigidly frontal and symmetrical composition, patently reveals the influence of a cult relief similar to the Boglio stele. It will be noted that the movements of the fishermen in the boats are directed toward the axis of the composition. The thickset masculine figures show a reaction against the more elongated anatomy of the Severan period, and the minor elements of the composition are treated in heavy monochrome masses.

The same characteristics are found in a mosaic of Carthage called the *Crowning of Ariadne* (more likely Venus), which also shows the influence, felt since the beginning of the century, of court ceremonial. Other works of this character have been found as follows: also at Carthage, the decoration of the fountain bearing the inscription *utere felix*; at El Haouria, the *Dispute of Athena and Poseidon*; at Thuburbo Majus, the *Triumph of Venus*; at Thugga, the mosaic showing Eros as the victorious charioteer; at Hippo, that with cupids gathering grapes; at

Lambiridis, the funerary mosaic of a woman belonging to a Hermetic sect; and, foremost, at Portus Magnus (Saint-Leu), a curious mythological mosaic of Hercules vanquishing a centaur. One readily believes that this large composition commemorates the campaigns of Maximian, surnamed "Herculius," against the unruly Moors in 297. The accompanying *Dionysiac Triumph* represents the final development of a theme initiated under Septimius Severus; it is startling to see the procession, so animated in works at the beginning of the century, now petrified into an immobility inseparable from divine and imperial majesty.

The secession of Domitius Alexander brought about the ravaging of the principal African cities, which scarcely regained their prosperity before the last years of Constantine. As a result, there are not many datable works from the years 305-20, but an important group, manifesting new trends, appears to belong to the second quarter of the century. A mosaic of Carthage which shows hunters gathered in prayer around a small shrine sheltering the nimbused statues of Apollo and Diana is still composed according to earlier principles. Thus the hunters are lined up in solemn immobility following the sacrifice of a crane, and the animated scenes on the upper and lower borders are bilaterally symmetrical. However, there is no longer the overpowering predominance of a few massive figures. The altar is not rendered by a solid mass of color as formerly, but by a series of lines on white background which merely indicate the contours, a new linear technique destined to be used extensively in popular mosaics. This new naïve style is apparent also in the placing of the crane, not on top of the altar, but on the front face of it, the principle being to depict each object from an arbitrary point of view rather than as it appeared in reality. Reaction against the preceding style is discernible also in the human figures, which revert to normal proportions, tall and slim, with the faces elongated like those of statues produced after 320. The severity of the central section, with its schematized figures, hieratic frontality, and vertical rhythm (accentuated by the cypresses in the background) contrasts sharply with the movement and variety of the border friezes. This same contrast dominates the composition of another, closely related work, the *Capture of the Wild Beasts* of Hippo, but in this instance the static section is limited to a kind of inanimate border formed by a wall of shields standing out against stiff cypresses. To the first half of the 4th century also belong in all probability the greater part of the mosaics of the pagan tombs at Thaeanae and the mosaic of Utica representing sea goddesses.

Toward the middle of the 4th century, mosaic art, which up to then had been homogeneous and of aristocratic character, divided into two currents: one, traditionalist and always highly skilled, the other, naïve and folkloric in style. Among the former are a mosaic discovered near the forum of Carthage, representing a ceremony of the imperial cult, and the admirable *Allegory of St. Monica* with diadem, dating from the reign of Theodosius. The popular style, essentially a Christian phenomenon, produced such works as a mosaic sarcophagus found at Tipasa and dating from mid-century, which treats various scriptural episodes in a linear technique that resolutely ignores anatomy and freezes the figures in stereotyped attitudes with utter neglect of proportions and spatial relations. Many other tombs of the close of the 4th and the beginning of the 5th centuries — for example, those, at Thabraca (Tabarca) — are decorated in the same manner. These unsophisticated techniques greatly resemble those which were used two or three centuries earlier by the Punic stonecutters and which reappear also in the sculpture of this period — at a time when the imperfectly Romanized Berber tribes once more enter on the historical scene. The Christian and the Punic character had in common a contempt for the carnal and the materialistic, and for the means which serve to translate these things into art. In their eyes the creation of illusion, or the representation of nature, however degenerated, seemed — like rhetoric — inseparable from polytheistic beliefs.

The Vandals, whose hatred of Roman civilization was fanned equally by their creed and their barbarism, were to

strike a final blow against the traditionalist school. The works produced under their domination belong either to the linear style, like the tomb mosaics of Thabraca, or to a style reminiscent of the flat reliefs, like the *Daniel* in the Mausoleum of Blossius Honoratus (father of the poet Dracontius).

The foliage scroll covering the entire floor of the Justinian basilica at Sabrata, the baptisteries of Kélibia and of Timgad, as well as an apse at Caesarea, bear witness to the reemergence in the 6th century of a refined style linked to the Hellenistic tradition. Nor can it be doubted, as a matter of fact, that one deals here with the work of Oriental artists who had arrived with the army of the basileus. The Shrine of Asterius at Carthage, precisely dated on the basis of coins from the reign of Mauricius (582-602) found under its mosaics, confirms the persistence of Oriental influence until the beginning of the 7th century. Intercourse with Syria and Egypt was maintained, furthermore, after the Arab conquests and explains the fact that, as late as the 10th century, the Palace of al-Qa'im at Mahdia was decorated with a nonfigural mosaic, coarsely executed but fairly close in style to those of the latest Byzantine basilicas.

MINOR ARTS. Inscriptions confirm the existence of the jeweler's craft. The Sahara yielded precious stones, and some of the numerous intaglios of the Roman period in Africa were the product of local artisans. This certainly holds true, for instance, for an agate in the Musée du Bardo (Cat. No. 358) which bears a Capricorn, a crescent, a rudder, and the word "Africa," and for a cornelian from Haidra which represents Saturn cupping a hand to his ear, a gesture familiar from votive steles. Nevertheless, stones of Oriental origin with Greek inscriptions predominate in today's collections.

Under the republic and during the first century of the empire, the African potters produced only a coarse ware following, in degenerated form, the Punic traditions; all the finer ceramics were imported, first from Campania and later from Arezzo. Subsequently local workshops developed, notably in Bizacena. Terra sigillata, while common in Mauretania, never conquered the markets of Proconsular Africa. Important manufacturing, such as those of the Pullaeni at Uchi Majus, of Novius Justus at Hadrumetum, and of C. Junius Draco, produced great quantities of lamps and figurines, the latter often coarse, but interesting in that their subjects were inspired by local types (e.g., a Bedouin on his camel) or by regional cults. At the end of the 2d century, a whole industrial complex established on the steppes of Bizacena, at El Aouja and at Haje el Aioun, launched the manufacture of earthenware vases on a large scale. This variant of the Mediterranean light-orange terra sigillata is typified by oenochorae in the form of heads, probably representing natives, and by cylindrical amphorae with decoration in relief on the bulge, for the most part depicting divinities. In the 4th century, the manufacture of lamps flourished more than ever and workshops were established in almost every city. These lucernae (PL. 29) were of red terra cotta, in prolate form, with two feed holes and a nonperforated handle. Their decoration began to include Christian subjects toward the close of the century; at the same time plates with stamped or incised decoration appeared, though they may have been imported from the Orient. This type of production was to continue until the Byzantine era.

Gilbert Charles PICARD

KNOWN ARTISTS. a. *Architect:* *Narcissus*, active at Leptis Magna in the late 2d and early 3d cent. (S. Aurigemma, *AfrIt*, III, 1939, p. 88; Weickert, *ThB*, s.v.) — b. *Sculptors:* *Zenon* (Ζηνων) of Cyrene, son of Zenion, active in the Hadrianic period; colossal statue of Jupiter for the Acropolis of Cyrene, now in the Museum of Ben Gasi (Bieber, *ThB*, s.v.). — *Ashlepiades* (Ἀσκληπιάδης, Asclepiades; sculptor or marbleworker of Nicomedia, active in the Severan period; he dedicated a votive image to Asclepius (Aesculapius) at Leptis Magna, now in the Homs Museum (P. Romanelli, *Leptis Magna*, Rome, 1925, p. 81, fig. 29; EEA, s.v.). — *Alumnus Thamaritensis*, period unknown; he worked in the studio of Victorianus and carved an aedicula (CIL, VIII, 2342). — *Cornelius Saturninus*, active in the 2d cent.; lost statuary group in the Antonine baths of Carthage.

It is not established whether he was the creator of the statuette of Mercury mentioned by Apuleius (*The Golden Ass*, 61, 11-28; C. G. Picard, BAC, 1946-49, p. 675). - *I. Plotius Clemens*, creator of a statue of Minerva found in the Severan baths of Ippona, which is perhaps older than the baths (E. Marec, Hippone la Royale, Algiers, 1954, p. 96, fig. 6). - *Aristius Antiochus*, probably active in the 3d cent.; group of Mithras between Attis and Men (?) in red limestone in the Forum Vetus of Leptis Magna (G. Caputo, AC, I, 1949, p. 205 ff.; EAA, s.v. Aristius Antiochus). - *c. Potters: C. Junius Draco*, active in Africa, Rome, Sicily, and Sardinia; signed many lamps (R. M. Haywood, Roman Africa, Economic Survey of Ancient Rome, IV, Baltimore, 1938, p. 56). - *M. Novius Justus*, of Hadrumetum, active in the second half of the 1st cent.; signed many lamps exported to Rome, Pompeii, Herculaneum, Velleia (R. M. Haywood, op. cit., p. 56 ff.). - *Pullaeni*, potters of Uchi Majus, active in the 2d cent.; they produced lamps which were exported to Rome and Ostia (R. Thouvenot, Publications du Service des antiquités du Maroc, XI, 1954, p. 123). - *d. Painter: P. Caledius Rufus*, period uncertain (CIL, VIII, 724). - *e. Mosaicists: Masurus* (or *Masurius*), active in the Antonine period; mosaic of Uthina, with Orpheus and animals (Inventaire des mosaïques, II, Tunis, Paris, 1910, no. 381; G. Guidi, AfrIt, VI, 1935, p. 124). - *Industrius*, active at Uthina in the Antonine period; two mosaics with mythological and marine scenes (Inventaire des mosaïques, II, Tunis, nos. 421, 426). - *Acomena*, active at Thydrus in the Antonine period; mosaic (Inventaire des mosaïques, II, Tunis, no. 62; EAA, s.v. Acomena). - *Thebanus*, possibly a Carthaginian, active in the Antonine period; geometric mosaic found at el-Aerg (Inventaire des mosaïques, II, Tunis, no. 89). - *Asparius* (Ἀσπάρσιος), active in the Antonine period; mosaic with nereids and sea monsters from Lambaesis (Inventaire des mosaïques, III, Algeria, Paris, 1911, no. 190; EEA, s.v.). - *Selius*, mosaic of Thamugadi (Inventaire des mosaïques, III, Algeria, no. 133; F. v. L., ThB, s.v.). - *Theodulus* (Θεόδουλος), active in the first half of the 6th cent.; mosaic at Hadrumetum (Inventaire des mosaïques, II, Tunis, sup., Paris, 1915, no. 163). - *Laurus*, active as head of a workshop in the first half of the 6th cent.; mosaic from Beni Hassen (Inventaire des mosaïques, III, Algeria, no. 117). - *Benenatus*, active at the end of the 6th cent.; apse mosaic at Lamigga (Seriana) (Inventaire des mosaïques, III, Algeria, no. 206). - *Nicentius*, head of a workshop at an undetermined period; a mosaic at Thuburbo Majus (Inventaire des mosaïques, II, Tunis, sup., no. 347d). - *Xenophonta*, active in an undetermined period; mosaic at Sufetula (Inventaire des mosaïques, II, Tunis, no. 338). - *f. Glassmaker: Anta*, active in an undetermined period at Caesarea in Mauretania (CIL, VIII, 9430).

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Illustrations: pls. 18-20.

AFRO-AMERICAN ART. The Afro-Americans comprise those groups, found in certain parts of North, Central, and South America, and the islands of the Caribbean Sea, whose ancestry is derived in whole or in part from Africa.

The distribution of this people is vast. The area they inhabit has its most southerly extension in the Argentine. From here it moves through Uruguay and Brazil to the Guianas and includes the coastal regions of the whole tier of countries along northern South America. They are present to a varying degree

in most of the Central American Republics, from Panama through Mexico. There is no island of the Caribbean, excepting only Puerto Rico, where they do not predominate. At one time they were concentrated in the southern part of the United States, but because of migration since the first World War, substantial numbers live in other parts of the country as well, particularly in the urban centers of the north and the west. They are sparsely represented in southeastern Canada, and their northernmost reach is Nova Scotia. Though the size of the Afro-American population can only be estimated, it is held to number from 30 to 35 millions.

The Afro-Americans are, in large part, a racially mixed people. Studies made in the United States in 1923-28 indicated that only about 20 per cent of the Negro population there was of unmixed African descent, and the process of dilution is continuing. When the various New World Afro-American peoples are compared, it is apparent that there are great differences in the amount of mixture they represent. The Bush Negroes of Surinam, for example, are of almost unmixed West African physical characteristics. This is also true of some of the West Indian islands, and of certain Afro-Brazilian groups. On the other hand, some degree of mixture with American Indians, in addition to the more prevalent crossing with Europeans, has everywhere occurred.

The influence of European elements on the Afro-American cultures varies from one part of the New World to another in accordance with the colonial status, past or continuing, of each New World territory. Thus Portuguese culture was the effective agent in Brazil, Spanish in the remainder of continental Latin America, and in the Caribbean, in Cuba, Puerto Rico, and the Dominican Republic. In Martinique, Guadeloupe, much of the Lesser Antilles, and in French Guiana, and on the North American continent in Louisiana, the influence was French. In the rest of North America, Jamaica, Trinidad, British Guiana, and British Honduras, Barbados, the Bahamas, and, as a later stratum in the Lesser Antilles, it was British. It was Dutch in Surinam, Curaçao, and Aruba, and Danish in the Virgin Islands before their acquisition by the United States.

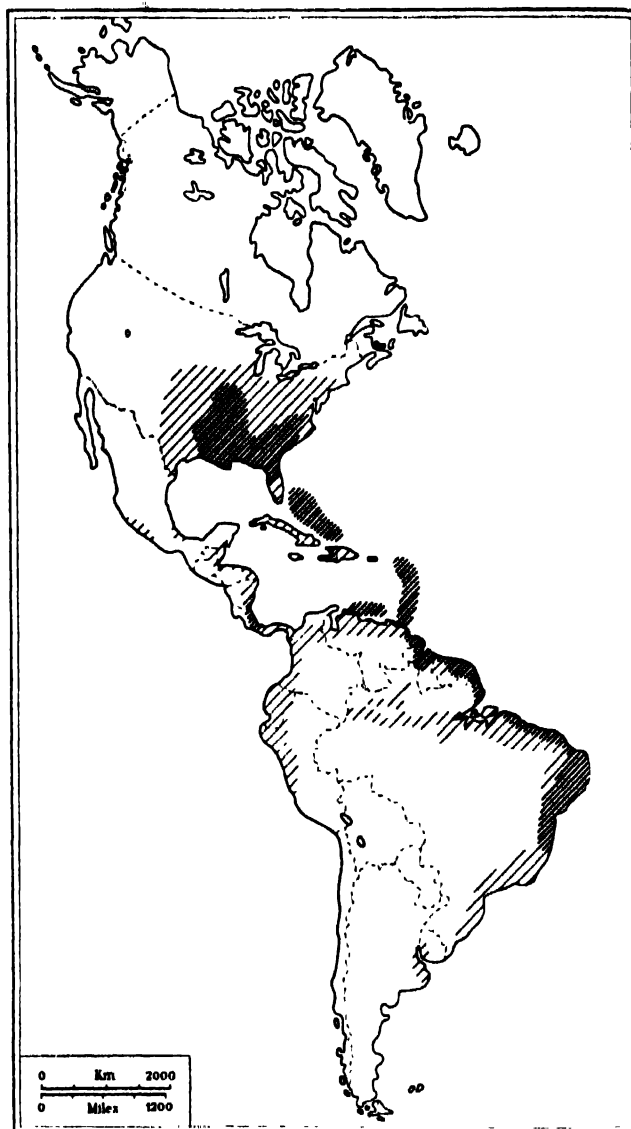
The culture of the metropole became the symbol of political, economic, and social power. The present-day Afro-American cultures in each region thus represent the particular kind of accommodation the Africans and their descendants were compelled to make. This accommodation is manifest in the behavior of Afro-Americans of all classes, but it has greater intensity in the higher strata of the social scale, and, in the uppermost circles, behavior is indistinguishable from that of Europeans. This is why Afro-American art, to the degree in which it can be differentiated as a valid category, does not come from these most acculturated levels. At these levels the conventions are essentially those of the country as a whole, so that no special treatment of the creative expression of artists in this broader context is necessary or, indeed, justifiable.

The places of origin of the African component have been ascertained through comparative ethnographic studies of African and Afro-American cultures, plus intensive research into the available historical evidence. The Africans brought to the New World were principally derived from the western coast of Africa, coming from populations which inhabited and still inhabit a band of territory, several hundred miles in depth, that follows the coast line from Senegal in the north to Angola in the south. Not all the societies of this area contributed in equal measure to the peopling of the New World, however. Slaving operations were most active in Senegal in the earliest days of the trade, but with the growth of the demand for labor in the New World the center of trading activity moved, so that in the middle 19th century it was concentrated in Dahomey, the Niger Delta, and Angola.

It will be apparent that the area of Africa from which the African component in the ancestry of the Afro-American was derived is the one inhabited by the very peoples who, in the past half-century, have been accorded world-wide fame for their artistic achievements. From Senegal to the Congo, stretching about the great arc of the Gulf of Guinea, we find the tribal names which have come to be an integral part of the history

of art (see BANTU CULTURES; GUINEAN CULTURES). Their wood carvings, metalwork, and ivory figures have stimulated some of the most vital developments of 20th-century painting, sculpture, and decorative arts in Europe and America, and have produced masterpieces that are valued possessions of museums and art collectors everywhere.

For an understanding of the incidence and nature of Afro-American art, however, it is essential not only to know its cultural pedigree but also to take into account the contacts



Diffusion of Afro-American art. Heavier shading indicates greater concentration of art production.

which Africans and their descendants had with their European fellow inhabitants of the New World. A full examination of the operative socioethnological and historical processes cannot be made here; but it can be stated that the social structure of the slave-owning states into which the Africans were introduced, differing from country to country, was a primary factor in permitting or discouraging the retention of African customs. In general, where there were large concentrations of Negroes, the slaves had relatively few contacts with Europeans and thus African retentions were more persistent; where slaves were less numerous or were more directly involved in the life of the whites, the impulses for cultural change were stronger.

It is through differences of this order that, taken as a whole,

the Bush Negroes of Surinam are to be rated as the most African of all New World Negro societies, with the peasant cultures of Haiti, the Afro-Brazilians of Bahia (Baia), the Jamaicans of the Morant Bay area, and the Afro-Cubans next. At the other end of the scale and most in accord with the patterns of the dominant white populations are the Negroes of the United States, Canada, and the Virgin Islands, for here the reinterpretations of African custom are in many cases so far-reaching as to require extensive analysis before they can even be perceived.

The way in which Afro-American cultures have responded to the varied influences brought to bear on them has also been analyzed by considering the several aspects into which a culture is to be divided. These aspects are expressions of the responses which every people make to certain universal experiences of man — to the need to obtain a living, to organize society, to explain the nature and functioning of the universe, to satisfy esthetic drives. They are, of course, intimately related in each individual culture, but despite this, it is amply apparent that each aspect has its own logic and its own dynamic, so that the response to a given historical situation is not necessarily the same in all the aspects which make up a functioning culture that can be discerned and described as a unit.

In these terms, we find that in the New World music, magic, folklore, and religious belief and ritual have most retained their African characteristics. These aspects are, moreover, found more frequently in unchanged form than any of the others. Even where Europeanization of Afro-American life has gone farthest, they are most apparent, despite the degree of reinterpretation they may have undergone.

The graphic and plastic arts fall into the category of cultural aspects which show the least African characteristics, in which respect they are to be classed with technology and economics. It is easily understandable why the latter two should in all the New World have lost their African characteristics and have come to conform to the standards set by Europeans. For, whatever the strength of the volitional drive to retention, here the African was least able to perpetuate his aboriginal customs. He had been impressed into an economic system in which he was powerless — in which he could merely play a passive role. In the nature of the case, too, he was forced to use implements not of his own devising, and where there were differences between African and European forms, to give over those he had used when he was a free agent for those provided him by his masters.

The reasons for the loss of graphic and plastic traditions are somewhat less obvious but become understandable when taken in historic and total cultural perspective. In this connection, it is important to compare the fate of these elements in the esthetic culture with that of the verbal, musical, and choreographic forms. All the latter can be carried on, no matter what restrictions on freedom of action may be imposed on the social and economic activities of a people. Stories can be told at night when the day's labor is ended. Songs can be sung at work, or in connection with worship. The dance, too, could thus be continued without undue difficulty.

The graphic and plastic art forms, however, cannot be carried on in odd moments when a hard day's labor is ended. What is more, they require special training and opportunity for practice if that degree of virtuosity essential to the effective expression of the artist's creative endowment is to be achieved. This is particularly true when we consider the media in which the African artist works — carving in wood and ivory, metalworking, and pottery making. Even the widely spread tradition of painting designs on houses, or working in bas-relief, was impossible for the slave to carry on. And while there was a certain kind of appreciation on the part of the master for stories and songs and dances, contemporary accounts of plantation life make it amply clear that interest in the graphic and plastic arts was at a minimum. Even where there were among the slave owners men of taste, who had sophistication in the arts, it is not likely that appreciation would have extended beyond the European to include work in West African and Congo styles.

As would be expected, such African traditions in the graphic and plastic arts as did survive are to be found where other types of African custom have been carried over in purest form. This is particularly true as regards retentions of ritual, for in West Africa and the Congo the closeness of association between art forms and religious expression parallels that which characterized Europe of the Middle Ages.

The retention of certain art forms in a culture did not imply that all were carried over, however. It is obvious that ivory carving could not be done in the New World, but this would not be true for horn and bone, both employed as media for African carving. Pottery has all but disappeared; it is made by Bush Negro women but is extremely crude and fashioned only for ritual purposes. Metalworking is a rarity. Here technical difficulties compounded the restrictions on the artist imposed by the slave system. Where slaves ran away to freedom and established permanent communities in the back country, as in Surinam, Haiti, Brazil, Jamaica, and elsewhere, even such African metalworkers as might have been numbered among them would not have known where to find the ore for smelting. Should ore have been available, or scrap metal obtainable, the need for instruments of production and defense must have taken such high priority that little if any time could have been given to make anything of no immediate utility.

Four Afro-American societies have produced art forms either in African style, or, where acculturative factors enter, are achieving forms of artistic worth. These centers are found in Brazil, Dutch Guiana, Haiti, and Jamaica. The media are wood carving and painting. Certain other forms are reminiscent of Africa, as for example some of the accouterments of the carnival groups in the West Indies and South America. But here the retentions are so tenuous and the proportion of European elements so preponderant that only in music and dance are African traditions apparent.

We may begin our consideration of the actual expressions of Afro-American art with Brazil. Afro-Brazilian communities provide the most striking instances of an almost complete carry-over of African religious systems of belief and ritual combined with almost complete economic integration in the general culture, which is of European orientation.

In its least acculturated forms Afro-Brazilian religion stems from Nigeria, Dahomey, and the Congo. From Nigeria came the cults derived from the Yoruba, called "Ketu" and "Jesha"; from Dahomey, the group called "Gege," perhaps the most "orthodox" of all African sects; and from the Congo, the Congo-Angola groups. Though the theology and rituals of these groups closely conform to African patterns, Europeanisms are present. The most striking manifestation of this is in the syncretisms with Catholicism which characterize African belief systems in various parts of the New World where the slaves became converts of the Church. In terms of these syncretisms, African deities are identified with Catholic saints, so that, for example, an initiate into one of the cult groups must complete his induction by making a pilgrimage to the church of his patron saint, the one equated to the African god to whose service he has been vowed. In the less "orthodox" *caboclo* and *macumba* groups, a certain degree of American Indian influence is apparent, while, as elsewhere in the New World, spiritualism has claimed numerous adherents.

Present retentions of plastic art forms are restricted to highly stylized representations of the ax of Shango, the Yoruban god of thunder, which are employed as dancing wands. However, it is clear that as late as the end of the 19th century, carvings almost in pure Yoruban style were being made, or, at the very least, were being used in cult rituals in Bahia, the northern Brazilian city that is the recognized center of the Afro-Brazilian cults. This is evidenced in the specimens, at present a part of the collection of cult objects in the museum of the local society of geography and history, that are illustrated in the pioneer work of the Brazilian scholar Nina Rodrigues and in that of her student Arthur Ramos, who continued the researches of his predecessor. Plate 30 is an example of an almost pure retention. It is a carving in pure Yoruban style of a man on horseback bearing on his head a container for the seeds used

by the practitioners of the Ifa divining cult in West Africa, a cult that has been completely retained by the Afro-Brazilians. Statuettes of this kind are customarily termed representations of Shango, though they are not necessarily so. The pedigree of this piece has not been established, but it was acquired in Bahia and can be assumed to have been executed and used there.

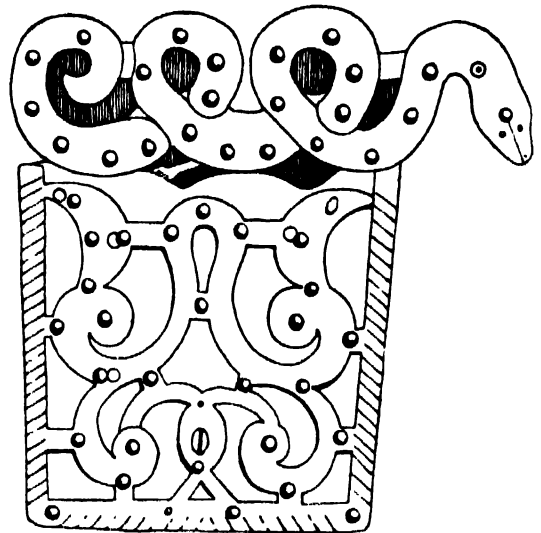
The fact that carving was widespread in Brazil in earlier times becomes apparent from the piece illustrated in Plate 31. This figure was recovered in 1941 by a functionary of the Brazilian national Serviço de Protecção de Patrimonio Historico e Artistico during demolition of a church in the coastal town of Rio Grande, in the extreme south of the country. The church itself dates from the early part of the 19th century, and this piece was found imbedded in the foundation of the altar to Our Lady. The style, though somewhat generalized, is undoubtedly West African. It can only be concluded that it was placed there by a slave who worked on the structure, perhaps as a stonemason, and who, responding to the syncretic patterns of Afro-Brazilian belief, lodged this figure in the foundation of the altar to add the power of the African supernatural being to that of the Virgin.

In certain parts of the New World, Afro-Americans have begun in recent times to utilize European techniques to give expression to creative drives whose inspiration came out of the life of their own group, and the Haitian painting shown in Plate 38 is an example of this. It represents a *service*, or *vodun* rite. Like the numerous other Haitian "primitives" who have become well known to students of contemporary art, the painter, Luisor Ernot, is unschooled. The tradition this painting represents is the more interesting because it is part of a development which cuts across interracial lines, as is apparent in the work of the Argentine artist Carybé, who, in Bahia, has produced numerous paintings and drawings, some of which have been published in a series of booklets that take their inspiration from both the religious and secular phases of Afro-Bahian life. The richness of the artistic inspiration to be derived from New World Negro culture is evidenced by the degree to which many aspects of this life have been used by artists of the United States, from the time of Mount, to provide subjects for sculptures, paintings, and other forms.

The most consistent art of any Afro-American people is that of the Surinam Bush Negroes. It is of interest not only because it comes out of a living African culture, into which it is thoroughly integrated, but also because here the aboriginal patterns of wood carving have been reworked so as to produce a distinctive style. As in Africa, wood carving is the work of men, and the carver of superior ability is accorded a place of prestige in his community. The Bush Negro uses a machete for roughing out the piece, and a small knife for the finer work of finishing his design, which is often worked in bas-relief. He achieves a fine polished surface by rubbing the carving with sand, and light-colored wood is sometimes darkened by applying palm oil or allowing the piece to remain in the smoke of a wood fire. He knows compass and dividers, European tools which his ancestors learned to use during the days of slavery, and which the African carver does not utilize.

The art of the Bush Negroes is highly stylized in form and symbolic in its assigned interpretations. They are often reluctant to reveal the symbolism, largely because so many of the pieces made by men and given to women for their use have esoteric sexual significance. This, in turn, is related to a fertility cult which has to do not only with the production of human offspring, but also with the fertility of the fields and of the game animals. In the peanut-pounding board shown in Plate 33, the motif on the left-hand side is a woman, here, however, represented as a bird; the central element is her head, with a headdress indicated at the extreme left; the two units to the right, on either side of the elongated incision at the center, are her breasts. The semicircular elements, decorated with the small brass-headed nails, are the wings; the inner semicircles, studded with the larger brass tacks, are the legs; the circles within these is the vagina. As in other pieces, the male is symbolized by a stylization of the sexual organ, seen in the center immediately to the left of the three-unit motif

that sets off the working surface of the board from the figure which constitutes the handle. Similar treatment with the same interpretation may be seen on the top of the stool shown in Plate 32, on the combs of Plate 37, and on the food stirrer, Plate 34. The design on the cloth beater in Plate 34, though it retains the customary sex symbolism, deviates from the usual practice in that it represents two sacred serpents in copulation, rather than human beings.



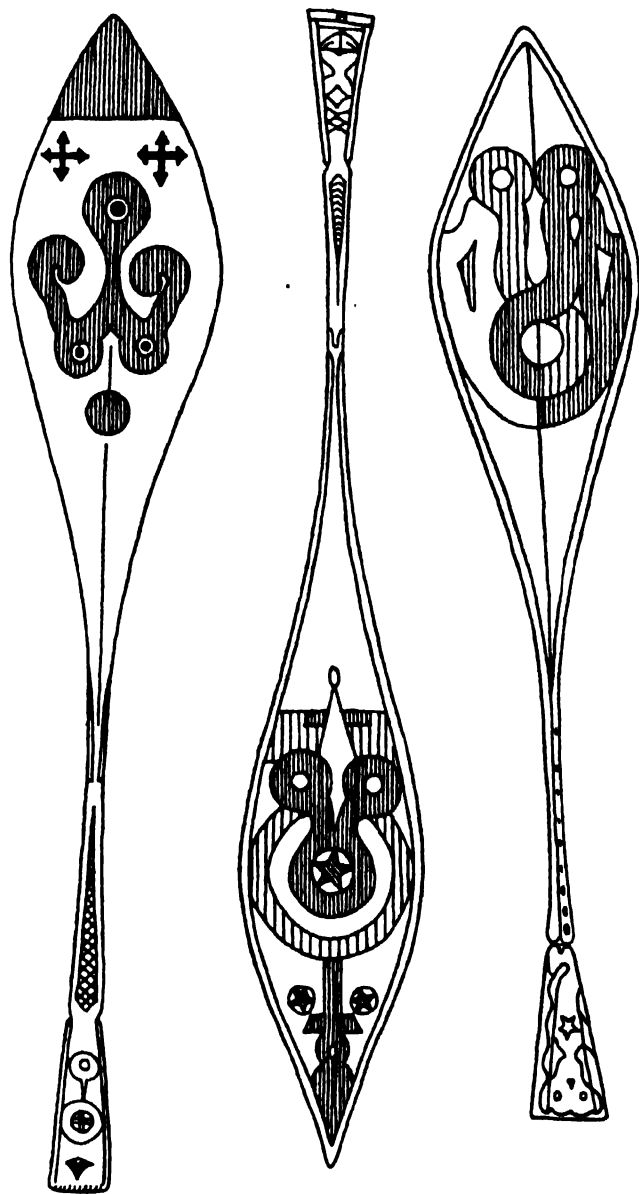
Types of decoration on wooden stools of the Guiana Negroes (Awka Tribe, Dutch Guiana).

The embellishment of the designs by the use of cowrie shells, as seen in Plate 32, and of brass tacks, as in Plate 33 and various objects in Plates 34, 36, and 37, is worthy of mention, since both cowries and metal studs are retentions of African patterns of design. The former were used in West Africa and the Congo as money, while brass rods filled the same economic function in some parts of the same area. Brass-headed nails are found more often, and in greater profusion, on Bush Negro pieces carved in the villages of the deep interior than on those made near the railroad. The explanation is that, despite the fact that these nails are purchased in the coastal city of Paramaribo, the purer Africanisms are to be found in the deep interior, where the tradition of metal ornamentation added to designs carved in wood has been kept in unmodified form.

The Bush Negro likes to demonstrate his virtuosity, since he thereby gains prestige and, in some cases, power. The skill with which the peanut-pounding board in Plate 33 has been carved is apparent at a glance; to be remarked are the manner in which its supports are worked, the cut-through ele-

ments in the design, and the insets of different tones of wood. Other evidence of virtuosity is to be had in the intricacy of work on the stools, the internal carving of the combs, and, above all, the chained food stirrers of Plate 36.

There are three principal Bush Negro groups. The objects figured here were all carved by men of the Saramacca tribe, but those of the Awka (Aucaner) and Boni make the same



Types of decoration on paddles of the Guiana Negroes (Awka Tribe, Dutch Guiana).

kinds of objects and decorate them with comparable designs. Each tribe, however, has its own stylistic patterns within the over-all tradition, those of the Awka and Boni being less restrained than those of the Saramacca, whose carvers at times exhibit a restraint that is almost classical in its directness. This is apparent in the clean lines of the functionally effective fire fan of Plate 35 or of the food stirrer in Plate 34, or, again, in the small chained stirrers of Plate 36. The stirrer of Plate 34 is unusual for another reason: it is one of the few pieces bearing a recognizable rendition of a human head. This is strongly in the West African tradition. The problem arises here of why the traditions of West African carving were given over for the almost completely nonrepresentational forms that generally

characterize Bush Negro art. Though various theories have been advanced to account for this striking change in style, no historical evidence has thus far explained it.

Turning to Haiti, we find a certain degree of African artistic retention, which, while not so consistent or so deeply lodged in the culture as in the case of the Bush Negroes, manifests specific Africanisms in a manner analogous to that found in Brazil. The mask depicted in Plate 39 was collected in the city of Port-au-Prince, and though its carver stated it to be a representation of the *vodun* deity Loko, it was apparently not used in religious rites, but was made for carnival purposes. The treatment of the eyeballs is worthy of note, since it resembles the West African pattern whereby the eye is represented either by cowrie shells or by a stylization of these shells.

One other example of art in Haiti may be described: the paintings on the wall of a cult center, or *hounfort*, of the African *vodun* deity Ogun, who is identified with the Catholic saint St. Jacques Majeur (PL. 38). The paintings represent the retention of an African tradition that has a wide distribution and were painted by the *vodun* priest who heads the center. The color used is principally black, with the occasional use of the background of the whitened wall.

The head shown in Plate 39 was carved by an elderly Jamaican of almost pure African descent, who signed it with his name, D. S. Miller. Whether this and the numerous other carvings he has made represent the carry-over of an African tradition or are merely the work of a gifted artist who takes persons of African physical type as his subjects, cannot be said. However, it is obvious that, despite the fact that carvings of heads of this kind do not function in the lives of the Jamaican Negroes, they are African in the quality of their interpretation. The African character of the coconut-shell mask from Puerto Rico (PL. 39) is much less apparent, while the influence of Europe is more so. It is of the type made in the village of Loíza, on the northeastern coast of the island, for use in the festival of Santiago Apóstol (St. James the Apostle), in which the Negroes who populate this region take the most active part. Though Alegria, who has described the fiesta, only suggests that there is a possibility that the saint has been syncretized with the Yoruban deity Shango, he feels that both in form and in social function these masks point to Yoruban counterparts used by the secret societies of this African people.

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Illustrations: PLS. 30-39; 3 figs. in text.

AGOSTINO DI DUCCIO (AGOSTINO D'ANTONIO DI DUC-CIO) 1418-81 (?). Florentine sculptor and architect. Agostino is one of the most personal, attractive, and puzzling of artists at work in the second half of the 15th century. His early work may have been as a goldsmith. His first signed and dated work, *Scenes from the Life of S. Gemignano*, 1442, consists of four panels now on the exterior of the Cathedral of Modena. Banished from Florence in 1446 on a charge of theft, Agostino fled to Venice and from there was called to Rimini for work on the sculptural decoration of Alberti's Tempio Malatestiano

under Matteo de Pasti, probably from 1447 until after 1454. From 1457 to 1461 Agostino was active in Perugia on the project usually considered his masterpiece, the façade of the Oratory of S. Bernardino, and on other work for S. Domenico and the cathedral, S. Lorenzo. In 1463 Agostino worked briefly in Bologna preparing a model for the façade of S. Petronio and in that same year in Florence received the first of two commissions for colossal figures for the cathedral. The first, probably in stucco, is now lost; the marble for the second was damaged by Agostino's assistant and later served for Michelangelo's *David*. The tabernacle for the Church of the Ognissanti (Bargello, Florence) is one of many smaller works dating from this period. In 1473 Agostino was again engaged on new commissions in Perugia: an altar of the Pietà for the cathedral, a chapel in honor of S. Bernardino, and the city gate, Porta delle Due Porte, a free imitation of Alberti's Tempio in Rimini (later finished by assistants). There are no further notices of Agostino after 1481, when he presumably died.

Agostino is distinguished among Florentine artists of his generation by the extent and importance of his activity away from Florence and by his extremely personal style, which may be considered an elaboration of the more lyrical ideas of such predecessors as Donatello and Ghiberti. The terms "Gothicizing" and "neo-Attic" have been used to characterize Agostino's preference for line as a means of expression and for a graceful and decorative effect, but both terms fail to suggest the freshness of Agostino's vision or the liveliness of his inventions. These qualities may be seen in his work in Perugia and Rimini, in which the subtle variations of faces, figures, poses, and drapery are all delicately adjusted to the special demands of sculpture in relief to achieve a taut balance between the suggestions of volume and space in the finely controlled patterns of the surface. Agostino's work as an architect is of minor importance; it is clearly dependent on the example of Alberti, and in S. Bernardino, Perugia, it serves as a frame for the elaborate program of sculpture. See RENAISSANCE (also III, PL. 302; IV, PLS. 400 and 402).

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AJANTA. Group of 29 chambers for Buddhist viharas (Skr. *vihāra*, monastery) and chaityas (Skr. *caitya*, temple), which, between the 2d century B.C. and the 7th century of the Christian era, was hewn into the rocky sides of the hills bounding the south of the great plain of the Deccan, India, near the small town of Ajanta, and adorned with wall paintings. These frescoes constitute the most important document of Indian painting of this period now in existence (see INDIAN ART). Some of them, famous for their beauty and originality, represent the highest peak ever reached by the art in India and are to be numbered among the masterpieces of the world.

SUMMARY. The rock-cut shrines (col. 159): *Topography; Discovery and restoration of the paintings.* Technique of the paintings (col. 161). Description and typology (col. 163): *The earliest paintings, to the end of the Sātavāhana period. Paintings of the Vākāṭaka period: a. The great compositions; b. Female figures; c. Decorative elements; d. Humor and representations of animals.* Religious import of the subjects and mode of representation (col. 169). Influence of Ajanta on Asiatic painting (col. 171). Some general aspects of the Ajanta paintings (col. 173). General conclusions (col. 174).

THE ROCK-CUT SHRINES. *Topography.* Ajanta, which lies 55 miles from Aurangabad and 39 miles from Jalgaon, is a small town situated on the route leading from the Khandesh plains to the plateau of the Deccan, which is bounded to the south by the irregular range of the Indhyari hills. The Buddhist shrines (PL. 40) are cut in the crescent-shaped scarp of the river Waghora at a site about 7 miles from Ajanta and 4 miles from Fardapur.

The traprock in which the shrines have been excavated has a hard surface divided into bands of varying dimensions. The

Buddhist excavators and sculptors availed themselves of this fact when building their temples and monasteries, seeking as they did to avoid cleavages in the rock wherever possible, to ensure the strength and durability of the shrines. In excavating, they proceeded from the top downward and inward, thus avoiding the use of scaffolding and enabling the work to be carried out with ease and convenience even at the higher levels. As the general arrangement was more or less stereotyped, they began by boring round or rectangular apertures in the rock at the points where they intended to place doors or windows. Entering through these, they excavated narrow alleys, after which the ceiling was cut and the alleys were widened into corridors leading into halls and chambers divided by columns. The latter, initially only rough blocks of stone, were afterward carved and adorned with decorative motifs. The methods followed in excavating the shrines may be observed in Vihara V, which was left incomplete because, after work on it had been begun, the rock was found to be sedimentary in the interior.

Discovery and restoration of the paintings. The early history of the Ajanta sanctuaries and their wall paintings is unknown. They are not mentioned in any religious or historical work, although the Moghul armies often entered the Deccan tableland by the Katl-i-Fardapur (the Ajanta Pass), and Āṣaf Jāh I built large fortified serais at both Ajanta and Fardapur for the convenience of troops and tradesmen passing along the route. The shrines, situated at the end of a blind valley and hidden by thick trees and rank vegetation, remained unnoticed by travelers and even by the inhabitants of the surrounding country until 1819, when some officers of the Madras Army, engaged in military reconnaissance or in search of big game, chanced upon them. The officers made a report to their headquarters in Madras, and on the basis of this report William Erskine read a paper upon the discovery before the Bombay Literary Society, thus giving the cultural world the first official report of the event. Lieutenant James E. Alexander visited the caves in 1824 and sent a lucid and relatively comprehensive account of the shrines and frescoes to the Royal Asiatic Society of Great Britain and Ireland. The discovery gained further publicity from the reports of other visitors. Finally, in 1839, James Fergusson visited the caves, and in 1843 he read a paper on the "Rock-cut Temples of India" before the Royal Asiatic Society. This attracted the attention of the Court of Directors of the East India Company, and they appointed Capt. Robert Gill to copy the frescoes and so ensure a faithful record of them for posterity.

Captain Gill went to Ajanta in 1844 and worked on the copies for 27 years. His work was exhibited in London at the Crystal Palace and most of it perished in the fire which destroyed that building in December, 1866. Ten years later, an attempt was made to remedy the great loss, and John Griffiths, of the Bombay School of Art, was commissioned by the government to make fresh copies of the Ajanta paintings. He worked at Ajanta for four seasons (November to March), making copies in oil color, and on completion these were placed on exhibition at the Victoria and Albert Museum in London. This labor was also lost in a fire which damaged the museum in 1885. Griffiths returned to Ajanta, recopied the most important paintings, and published his work in two volumes in 1896. Further copies of the frescoes were made in 1908-10 by Lady Herringham, assisted by several Indian artists, this time in water color.

It was now felt that it was not sufficient merely to copy the frescoes but that steps should be taken to restore them and preserve them in a scientific manner. In 1918, through the help of Sir Rennell Rodd, British Ambassador in Rome at that time, Prof. Ghulam Yazdani, Director of the Archaeological Department of the State of Hyderabad, arranged for two Italian restorers, Professor Cecconi and Count Orsini, to go out to India and work on the paintings at Ajanta. The Italian experts stayed at Ajanta from 1920 until 1922 and treated a large number of paintings with great success. The task was a particularly difficult one. The neglect of centuries, the inclemencies of the weather, the damage done by bats and birds and

her nest-building creatures of the jungle, and also by insects the plaster, had all combined so to damage the paintings that in some places the color film was hanging almost loose from the walls, ready to fall at the slightest disturbance. The restorers cleaned the painted surface, filled up the hollows behind it caused by insects, and fixed the loose stratum of color firmly to the rock wall. The work of the two Italians was continued by Indians trained by them in the method of restoration. The paintings were photographed in black and white and in color immediately after restoration and published by Professor Yazdani (see BIBLIOG.).

TECHNIQUE OF THE PAINTINGS. The *Viṣṇudharmottara*, a book dating from the 7th or 8th century but compiled on the basis of earlier works of the 4th or 5th century, when the art of Ajanta was at its zenith, contains some details regarding the technique used by artists of the earliest period. The process of preparing the ground of the paintings described in this text is exactly the same as that used at Ajanta; that is, the wall was first covered with a layer of clay plaster, which in turn received a coat of fine lime. Even the ingredients of the clay plaster are the same as those to be found by chemical analysis in the plaster of the Ajanta paintings. After preparing the ground, the artist drew on it the outline of the figures to be painted. A close study of these outlines shows that the artists of Ajanta were accomplished draftsmen, and many of the distinguishing features of the finished paintings, such as a true but graceful portrayal of human and animal figures, a love of decorative detail expressed in fine brushwork, vividness of expression, and natural settings, often combined with dramatic effect, may already be seen in the initial drawings. These features are well illustrated in the linework of the subjects painted on the right and left walls of Chaitya X, which, according to contemporary inscriptions, was excavated in the 3rd century, although the paintings in it may not all belong to the same period. The story of the *Six-Tusked Elephant* (the *Ṣaḍdanta Jātaka*) and that of the *Blind Parents and the Dutiful Son* (the *Syāma Jātaka*), painted on the right wall of this temple, have generally been assigned by experts to the 3rd century, while the frescoes of the *Retinue of the Raja Proceeding to Worship the Bo Tree* and the related *Musical Performance and Dance*, on the left wall, may belong to a still earlier period, as there is an inscription on this wall attributed by both European and Indian scholars to the 2d century B.C. The linework of these subjects shows consummate skill in drawing, evidently based on long practice extending over a millennium or more. The artists of Ajanta appear to have been draftsmen first and colorists afterward, for the range of colors in the earlier paintings is very limited, consisting chiefly of red ocher, terre verte, lampblack, and white lime, which have been used either pure or mixed to produce a desired effect. The coloring is also flat, the washes not having been deepened or lightened to indicate volume or depth as in later paintings.

In the verandas of Viharas II and XVII, where the architecture admits ample daylight, the original colors used in later painting may be studied to advantage. There are several shades of terre verte, and the freshness of the blues, despite the passage of fifteen centuries, is surprising. The artists of Ajanta probably prepared ultramarine from lapis lazuli imported from the West, beads of which have been found in great abundance in the megalithic tombs of the Deccan. (There is a complete absence of the blue tint in Ajanta paintings of the 3d century or earlier). A technical study of the paintings in these two verandas also shows that the highlights on the noses and chins of the dark-brown figures are not produced by wiping out the color at these points but by applying a light-yellow tint over the brown. Again, blue streaks have been painted beneath the eyelids of some of the figures to represent shadow with great effectiveness. A certain perspective effect has been obtained by painting figures in light colors against grounds of a deeper color, and sometimes the same impression has been given by the insertion of black dots on the background.

The frequent presence of red and green horizontal and vertical bands may perplex the observer, but they are merely

conventional devices used to separate the different episodes of a story. Yet another convention lies in the coloring of human beings: aboriginal tribes living in forests have invariably been painted green. Triangles are used to represent hills. Clouds are indicated by blue rings, a convention also to be found in later Chinese and Indian art.

The principal personages in a story are drawn much larger than the minor ones, to indicate their relative importance in the painting. This proportional symbolism is not peculiar to Ajanta but has been adopted in various periods in both Asia and Europe.

A device often to be seen at Ajanta is the division of a painting into a series of compartments, one above the other, in order to group a series of incidents from the same story by unity of place, thus emphasizing the setting pictorially. In the *Matiposaka Jātaka* illustrated on the wall of Vihara XVII, for example, all the episodes which took place in the royal palace at Benares are shown in the upper band of painting, while those which occurred in the forest of Mount Chandorana, where the Sacred Elephant lived with his blind parents and where he was captured by the royal huntsmen, are delineated in the lower part.

There are, of course, no cast shadows to render chiaroscuro effects, but an attempt in this direction may be found here and there, for example in the deeper color washes below the chins of several human heads. This method is remarkable successful in the case of the *Lady Kneeling at the Feet of a Raja* in Vihara II, where a rounded effect has been produced by the deep coloring on the right side of the curved back.

It is true that at Ajanta there are specimens which exhibit crudeness of drawing as well as lack of perspective, but it should be remembered that the art of Ajanta is essentially religious and the work of expert artists is seen side by side with that of Buddhist monks, often mere novices with the brush. Both were anxious to show their zeal in adorning the abode of the Buddha. The artistic value of the paintings at Ajanta should not be judged, therefore, by the work of the bhikshus, which was usually limited to conventional representations of the Buddha. The technical skill of the professional artists in delineating objects in perspective is to be seen in the painting representing the *Birth of the Buddha*, where a circular pavilion is depicted without any sense of flatness. Another example in which space and depth are admirably conveyed is the *Lustration Scene*, on the back wall of Vihara I. Here the line of pillars and the figures in the two pavilions appear in their correct relative positions, one behind the other, presenting no incongruity to the eye. In this painting an attempt at shading is to be noticed in the placing of white dots on the blue of the pillars.

Chemical analysis of the color layer has not yet revealed with any certainty the medium which was used by the artists of Ajanta for binding their colors. The fact that the stratum of color is very thin, its exposure to the weather for fifteen centuries or more, and the action of time itself have all contributed to thwart the efforts of chemists in this direction. In the *Viṣṇudharmottara* several media are mentioned, including tree resins, the pulp of the bel fruit (*Aegle marmelos*), and glue made from buffalo skin. Animal-skin glue is still used as a binding medium in Japan. Since Buddhist artists were not averse to animal food, it is not unlikely that they used some kind of animal-skin glue for binding the colors at Ajanta. In any case, the medium adopted has not caused any change in the original color of the minerals used, and the coloring of the paintings on the walls and ceilings of several viharas still looks very fresh in spite of its exposure to sunlight and moist air for many centuries.

There is a wider range of colors to be seen in the paintings of the 4th and 5th centuries. The most significant of these are the vermilions and blues, which attract attention at once by their brilliance and freshness. The drawing and composition are also much finer; the attitudes and gestures of the human figures are more realistic. Highlights are freely used to accentuate beauty of lineament or to express religious sentiments or emotional states.

DESCRIPTION AND TYPOLOGY. To appreciate properly the art of Ajanta, it is necessary to understand the subjects represented in the paintings. The scenes depicted on the walls are based upon either the Jātakas or the Avadānas, stories of the previous lives of the Buddha, or upon incidents in his last life as recorded in the Buddhist scriptures, relating to his birth, renunciation, enlightenment, and teaching. There are also representations of bodhisattvas (Buddhas-to-be) and of Indra, Brahmā, and other deities of the Indian pantheon.

The earliest paintings, to the end of the Sātavāhana period. To begin with the earliest paintings of Ajanta, a scene painted on the frieze above the nave on the left side of Chaitya IX may be examined. The painting represents a mythical herdsman possessed of Herculean strength, who could subdue the wildest animals by holding them by neck or tail. The subject seems to have been popular with Buddhist artists, both sculptors and painters, of the earliest period, for it is to be found carved at Kuda and Nasik, where the shrines are almost coeval with Chaitya IX at Ajanta, which was excavated in the 1st or 2d century B.C. The painting reveals the artist's close study of wild animals and his ability to delineate human or animal figures in any pose required by his conception of a theme and to produce effects of bodily tension and movement.

Skillful drawing and perception of human emotions, combined with a love of nature, are still more evident in the two subjects painted on the right wall of Chaitya X. Both have been assigned to the 3d century on the basis of the racial features and the costumes shown in them. One of these paintings represents the story of the two blind anchorites and their dutiful son. The youth was named Śyāma and, being a bodhisattva, he was endowed with omniscience and all noble qualities of heart. One day, as Śyāma went to fetch a pail of water from the well, the king of Benares, who had come to that spot on a deer hunt, by mistake shot him in the back with a poisoned arrow, which pierced his heart. A pair of deer which had become endeared to Śyāma when he lived in the forest informed his blind parents of the tragedy, and they began to wail and cry at the sad news. The king of Benares was stricken with remorse at his folly and, carrying the body of Śyāma to his parents, he promised to serve them with all the devotion of their deceased son for the rest of their lives. Ultimately, however, the intervention of a goddess not only brought Śyāma back to life but also restored the eyesight of his parents. All these events are vividly depicted. The figure of Śyāma carrying the pitcher of water has a grace of its own, different from but not inferior to that with which Greek sculptors endowed their statues of the gods. The head of Śyāma's father shows a pathos comparable with that of the most intense figures in Western art, while the galloping of the pair of deer is most faithfully depicted and is a fine example of animal study.

¹ The second painting represents the *Saddanta Jātaka*, which appears to have been a favorite theme of the artists of Ajanta, as it is painted twice there, in Chaitya X and later in Vihara XVII. According to this tragic birth story, the future Buddha was once born as a colossal six-tusked elephant, whose wife Cūlasubhadrā, through jealousy, caused him to be killed, only to die herself afterward from sorrow and remorse.

The various events in this dramatic story are rendered in Chaitya X with a skill that shows a perfect correspondence between pictorial technique and the superior moral world the artist wished to convey through the figures. The painter has arranged all the incidents which took place in the forest, where the Great Elephant dwelt with his herd, in the first part of the fresco; and all the events which took place at Benares, where Cūlasubhadrā was reborn as the favorite consort of the king, have been grouped together at the end. This division does not altogether respect the chronological sequence of events, but the composition gains considerably from the figurative continuity made possible by the unity of place. The lotus lake, the sal tree in bloom, and the characteristic movements of the elephant, such as the waving and raising of the trunk in various moods, have been drawn not only realistically but also with great imagination. Alligators and pythons populate the land-

scape, as a reminder that elephants living in marshy country are always exposed to attacks from such monsters, and the dramatic effect is enhanced by the figure of a huge python encircling a tree and gripping in its jaws the hind foot of an elephant. The elephant, trying to extricate itself, has placed its forehead to the ground and is squealing with pain, while the herd gathers round to assist in the struggle against the monster. Nearby the artist has shown an alligator thrown on its back by an elephant, which has placed its foot and trunk on the chest and belly of the reptile in an attempt to crush it to death by its enormous weight.

The bath of the Great Elephant with his following in the lotus lake is vividly executed, and no less realistic is the great pipal tree (*Ficus religiosa*) in whose shade the leader was wont to rest at noon. The leaves of the pipal are shown in great clusters, and they are mostly dark green in color, though some are reddish brown, giving an autumnal effect. The shoots are pink-brown, and their wavy form and branching off into smaller shoots show close observation of this tree.

In the palace scenes the queen is shown in various moods. The most impressive is that in which she has fainted at the sight of the tusks of the Great Elephant, brought to her by the royal huntsmen at her own request. The king is supporting her, one hand behind her back, the other clasping her right shoulder. One maid is fanning her; another has brought water to pour over her head or sprinkle on her face; a third, nearest to the queen, offers her a drink; and yet another, squatting on the ground, is massaging the soles of her feet to revive her. Apart from the dramatic effect of the scene, the composition of the figures is excellent, and each is caught in a natural pose. The dress is scanty but elegant in design. The ornaments and jewelry are of a primitive type, consisting of strings of beads round the head and waist and metal necklaces on the chest. Heavy arm bands and bracelets are worn by both men and women, and clusters of little round bells adorn the ankles of ladies of high rank. The modeling of the limbs and the grace of the body lines exhibit consummate skill in drawing. The range of colors, however, is still limited to the five prime earth colors: red ocher, yellow ocher, terre verte, lime white, and lampblack. There is no deepening or lightening of washes to create effects of volume, which is admirably suggested, however, by the sweeps of the brush lines.

Paintings of the Vākātaka period. The art of Ajanta, as exhibited in the two paintings just described, appears to have reached a high level before the close of the 3d century, when the Vākātakas succeeded the Andhras as the rulers of the Deccan. The kings of the new dynasty had intermarried with the Nāga chiefs of Padmavati (in old Gwalior State) and with the Gupta emperors of northern India. Prabhāvati-gupta, daughter of the Gupta emperor Candragupta II (ca. 375-414), married the Vākātaka king Rudrasena II (ca. 385-90). Earlier still, Gautamīputra, son of the Vākātaka king Pravārasena (ca. 275-335?), had married the daughter of Bhavanāga, the Nāga king of Padmavati. The name of Bhavanāga appears in the genealogy of the Vākātaka kings in contemporary inscriptions, although as a rule the names of maternal grandfathers are included in royal genealogies only in exceptional cases. The Vākātaka kings and some of their ministers were enthusiastic patrons of Buddhist religion and art. Under their rule the monasteries of Ajanta were visited by many pilgrims from north India and the countries beyond it. In the paintings of Ajanta which have been assigned, on the basis of inscriptions or for other reasons, to the 4th or 5th century, the aboriginal inhabitants of south India are rarely portrayed, and the figures show the features and dress of people from other parts of India or from western or central Asia and also, perhaps, pilgrims from China.

The impact of alien visitors belonging to different social classes, practicing different arts and crafts, and holding very different ideas about religion and monastic life, brought about a vast change in the general outlook of the Ajanta artists. Simplicity was replaced by luxury, austerity by a fullness of composition, provincialism by universality, and the pattern of life shown in the paintings of this period (4th and 5th cen-

tures) is extremely rich and varied. The royal pavilions are furnished with chased metal thrones and the curtains and awnings have embroidered borders and pearl tassels. Princes and princesses wear gorgeous jewels and costly silks or gold and silver brocade of exquisite design. Musical entertainments, animal combats, hunting trips, stately cavalcades with riders on elephants and horsemen as well as infantrymen, the march of armies, and the violence and turmoil of the battlefield are all accurately depicted, but in such a manner that the spirit of Buddhism emanates from every scene. There is love for every aspect of creation, from human beings and animals down even to reptiles. There is charity toward the indigent, mercy even at the cost of personal sacrifice, sympathy for the oppressed, and perfect restraint of those emotions which lead to the transitory pleasures of life.

a. *The great compositions.* The finest specimens of Ajanta painting are to be found in Viharas I and XVII, built toward the close of the 5th century under the Vākāṭaka dynasty.

To begin with Vihara I, the most important fresco is that which appears to represent the *Bodhisattva Padmapāni* (PL. 48). Some scholars have identified the subject as Prince Siddhārtha before his renunciation, because it is painted next to a scene in which Gautama, after renouncing the world, dons the robe of a mendicant monk, or bhikṣu.

The central figure is of colossal size and, whether it represents the Bodhisattva Padmapāni or Prince Siddhārtha, it bears the marks of both high rank and great spiritual stature. The expression is sublime, with the tranquillity of one who is no longer affected by joy and sorrow. The scheme of the painting is very subtle, for the artist has placed the prince (the bodhisattva) amidst courtiers, ladies, and royal guards befitting his earthly rank, but the serenity of the face and the meditative gaze indicate unmistakably that, while still surrounded by this world, he is spiritually detached and free.

The physical features of the prince do not possess the perfect anatomical symmetry of classical Greek statuary, but they have a beauty of their own, to be seen in the broad chest, the well-developed shoulders and arms, and the well-set head and neck. The dress is scanty, but the garment covering the lower part of the body is probably of silk, with check patterns in different colors. The princely dignity is further emphasized by the gold crown set with jewels, the necklace of pearls, the large earrings, the arm bands and wristlets, and, above all, by the great rope of elegantly twisted strands of pearls, hung from shoulder to waist. The long, black hair, falling softly on the shoulders, affords a strong color contrast that causes the head to stand out in full relief. To enhance this effect, the artist placed a series of dark-green dots close together behind the golden crown. To add to the illusion of a body in the round, he darkened the outline of the drawing and used washes of a darker color along the outline, in contrast to the tone used for the main part of the body.

The features of the prince are those of an Indo-Aryan of high birth, but the complexions and costumes of the attendants show them to be of very different races. For example, the handmaid in long blue velvet coat and high embroidered cap appears, from her features, to be of Persian origin, and the guard with drawn sword is undoubtedly of Negroid or Hamitic stock, with his dark complexion and heavy features. The consort of the prince, on his left, is also of dark complexion, in contrast to the prince, whose skin is fair. The artist apparently intended to show that the Buddhist faith was for the entire universe, without any distinction of race or country.

To render still more evident this universality of Buddhism, which embraced all creatures, the painter placed in the background pairs of pigeons and peafowl, monkeys, a lion, some celestial musicians (Skr. *kinṇara*), and other real or fabulous creatures, all rejoicing in the decision of the prince to renounce the world. This joyful note makes a poignant contrast to the sad expressions on the faces of the attendants, caused by human feelings of love and affliction at the departure of the prince.

The color scheme in this painting is no less ingenious. The red of the conventional hills contrasts well with the green

of the various trees, plants, and bushes growing upon them, while the splashes of blue and the gleam of pearls point up the dark tints of the human faces and forms. The highlights on the brow, nose, and chin of the prince enhance the effect of serenity. This fresco is rightly held to be the masterpiece of Indian painting, from both the religious and the artistic standpoint. Some European critics have compared it with the paintings of Michelangelo on the ceiling of the Sistine Chapel for grandeur of conception and deep religious feeling.

Another subject of great religious significance is the *Return of Gautama to Kapilavastu*, the capital of his kingdom, at the invitation of his father King Śuddhodana. While begging from door to door, he meets his wife Yaśodhara, who has learned of his visit and comes out dressed in her finest clothes and jewelry and accompanied by her son, with the intention of tempting Gautama back to the world he has abandoned. Yaśodhara is defeated in this attempt by the divine calm and supreme indifference of the Enlightened One to all worldly ties. She is so impressed by the Buddha's teaching that finally both she and their son Rahula join the Order. In this fresco (Vihara XVII) the artist has drawn the figure of the Buddha on a much larger scale (about 10 ft. high) than the other figures, to indicate his spiritual stature as compared with that of ordinary human beings; the figure of Yaśodhara, for instance, is very small in comparison.

The outline is restricted to showing the curves of the shoulders, arms, and hands, and the variety of colors is not very great, but both drawing and color exhibit extremely fine taste. The Buddha wears an orange robe and holds a green (jade) begging bowl in his hand, which he extends toward Yaśodhara. She has pushed the child lovingly in front of her to be blessed by the Enlightened One and seems to be overpowered by feelings of love and reverence as she recognizes the high spiritual plane attained by him who had once been her husband. The head of the Buddha is significantly inclined toward Yaśodhara, and the child, his hands outstretched, gazes expectantly up at his father.

The human and spiritual aspects which distinguish this subject have been most effectively expressed by the artist, and no less delicate is the conception of feminine beauty and elegance he has shown in the portrait of Yaśodhara. The rhythmic treatment of the different parts of her body, the graceful pose, the fine brushwork in the curls above her temples and in the locks spread over her shoulders, all exhibit art of a high order. Her complexion is a pinkish white, which accords well with the light color of her dress and her pearl jewelry. The many bracelets on her wrists reflect the pleasure Indian women have taken in this ornament from ancient times.

Another subject of this period (5th century) worthy of particular attention is the *Sinhāla Avadāna*, the story of a previous birth of the Buddha. Here we have a large composition divided into several scenes, which begin with a shipwreck and close with a battle between the army of Sinhāla and the forces of the ogresses (Skr. *rākṣasī*) who inhabited the island near which Sinhāla's ship was wrecked. The battle scene represents vividly the method of attack, the various types of weapons used, and the frenzied tempo, here reduced to a rhythm, of close combat. The weird element of the myth is fully rendered in the uncanny figures of the ogresses, and even though some elements may be conventional, the *Army on the March* emerging from the gate of the royal city may be considered, on account of its ensemble, one of the greatest works of art of its period. The modeling of the elephants is so perfect that they appear to be in bas-relief rather than painted.

b. *Female figures.* During this period of splendor woman was a symbol of beauty for the artists of Ajanta. They have shown her in many graceful attitudes, often veiled only in clinging garments of fine material in order to display to advantage all her bodily grace, but she is never shown nude. Perhaps the idea of exposing her unclad to the public gaze was repugnant to the mind of the Buddhist artist. She appears as a princess, a maidservant (PL. 48), a peasant woman, a nun, or even a dancing girl, but in none of these roles has

she ever been made to appear mean or pitiful; on the contrary, she is always presented as being worthy of admiration or adoration. The poses are all natural, typical of Indian ways of life, and never conventional or artificial. The pose, for example, of the peasant woman looking toward the ascetic (the bodhisattva) in the *Saṅkhaṇḍa Jātaka*, painted on the wall of the left gallery in Vihara I, is one often assumed by Indian countrywomen when they squat on the ground in circular groups. She has placed her left hand on the ground to support her body, and she is resting her head on the right hand in a way which suggests her attention to the sermon of the Buddha. The perfect balance exhibited in the drawing of the head and other parts of the body suggests not only suppleness of limb but also a happy grace of mind and manner. She is wearing a collarless and sleeveless garment which, although it completely covers her back, may have exposed the upper part of the body in front; the artist has painted her with her back to the onlooker.

In Vihara I, which was excavated and painted toward the end of the 5th century, there is a great display of feminine beauty and of the dress and jewels worn by ladies of rank. The artists of Ajanta appear to have been familiar with court life and with the sentiments of the poetry of the period. It is thought that Kālidāsa lived for some time at the court of the Vākāṭaka kings at Ramtek. The Prakrit poem entitled *Sethubane* by King Pravārasena II (ca. 410-40) was probably revised by him. Moreover, in his poem *Malavikāgnimitra*, Kālidāsa mentions a "room with paintings," which suggests that he may even have visited Ajanta.

The women referred to above show all the exuberance of youth in their graceful forms and accord with the ideals of feminine beauty expressed in contemporary poetry. In the painting entitled *A Monk at the Palace Door*, the expression on the face of the princess is full of pathos; the artist has emphasized this by accentuating those features that indicate youth, such as the fully developed bust, the gracefully curved arm, the tapering fingers, and the long hair falling down over the shoulders. The original painting here is much damaged, but art critics may admire the graceful posture and the variety of dress and ornament in a similar subject in this same vihara, representing a scene from the *Mahājanaka Jātaka* (PL. 42) in which the prince discloses to his consort his intention to renounce the world. The grouping of the figures, and especially those of the women, is felicitous. The different styles of hair-dress, the beautiful pearl jewelry the rich dresses, with the upper part diaphanous in the case of young girls, and the general expression of grief and sorrow are artistically of a high order.

Of still greater interest is the painting of the girl known as the *Black Princess*, on the back wall of this vihara. The lines of her body are indicative of her youth, the fine features and the delineation of her eyes, with hazel-brown irises and faint touches of red at the corners, very realistic. The treatment of the hair on the temples and the nape of the neck is an imaginative piece of brushwork. The jewelry is of fine design, and the pearl tiara with a sapphire centerpiece is particularly effective. For pose, decorative elegance, and feeling of repose, this painting is justly considered one of the masterly depictions of feminine form at Ajanta.

The paintings in Viharas II and XVII, almost coeval with those of Vihara I, also contain excellent specimens of feminine grace and elegance. Among the more important, mention should be made of the figure of Māyā, who is shown leaning against a pillar in the scene depicting the *Birth of the Buddha* in Vihara II. In this painting the artist seems to have been transported by perceptions of ideal beauty, paying little attention to realistic form; it is a superb piece of Indian art, showing fine conception, perfect technique, and a highly developed decorative sense. The slight inclination of the head combines with the curves of arms and waist to yield a pose full of grace, while the black coils of hair and the pearls add warmth and luster to the soft, brown skin.

Another charming work in the same vihara illustrates the secret love of Irandati for the yaksha prince Purnaka. Irandati, a daughter of the Nāga king, is shown first in a swing and afterward leaning against the post of the swing, talking bash-

fully to Purnaka, who is enchanted by her sweet voice and proposes marriage to her. The expression of feminine timidity combined with dignified restraint on Irandati's face is in keeping with her royal birth, but following the canons of Indian art, the artist has also illuminated her expression with a spiritual glow arising from the reciprocal feeling of love in her heart. Technically, this effect has been obtained by highlights on the forehead, nose, lips, and chin. The face of Purnaka also is alight with similar feelings, but the gesture of his fingers, according to the symbolic language of the dance, indicates that he is fearful that his proposal may not be accepted.

Passing from Vihara II to Vihara XVII, we observe further representations of feminine beauty. There is the scene of Prince Viśvantara broaching the sad news of his banishment to Mādri, his wife. The portrayal of Mādri, in both face and body, corresponds to the supreme canons of feminine beauty and recalls similar traits described in contemporary poetry: the eyes of a gazelle, the fine nose, the full breasts contrasted with the narrow waist, the soft arms, and the tapering, sensitive fingers. The exuberance of youth seems to be curbed by a serious mind, especially indicated in the delineation of the eyes.

An equally attractive subject is the *Toilet Scene* (PL. 45) frescoed on the wall between the front and right corridors. The colors of the painting are much faded, so that it is not possible to appreciate fully the lines of the face and their expression, but those of the body and dress are intact and exhibit a refined taste and skill in drawing. The postures of the four figures in this scene are all graceful, but that of the chowry-bearer to the left of the princess is particularly elegant and spontaneous. She holds the fly whisk (chowry) in an unaffected manner and looks naively round with a gentle turn of the head. Her pose, with the left knee bent so that the heel of the left foot is raised and only the toes touch the ground, creates a pleasing, undulating body line. The most notable feature of the painting, however, is the effective use of chiaroscuro, shown in the splashes of light on the rose-colored ranges of hills and in the dark-green foliage of the mango trees.

c. Decorative elements. The decorative sense of the artists of Ajanta seems to have run riot in the 5th century. Not an inch of space is left unadorned on ceilings, walls, door and window frames, or the pedestals and capitals of columns. The designs and motifs have a kaleidoscopic variety that includes human and semihuman beings of fantastic form, quaintly and richly dressed, dancing and clapping their hands or sipping wine from large cups into which their aquiline noses seem to be dipped; birds and animals (PL. 41) of pleasing decorative design in frolicsome attitudes, nestling down, sporting, and dallying; flowers and fruit of the choicest form and color lying amidst their beautiful foliage. Last, but by no means least in terms of beauty and skill, there are the jewelry designs and geometric patterns and symbols, varying from the simplest to the most elaborate, among which is the swastika, used in a way that sometimes recalls the continuous friezes in Greek art.

d. Humor and representations of animals. A sensitive feeling for whimsical motifs is one of the distinguishing features of the art of Ajanta. This often lends a fresh vivacity to more somber religious themes which might otherwise have produced mere iconography. For instance, in the *Viśvantara Jātaka* (PL. 44), painted on the left wall of Vihara XVII, the ugly features of the avaricious Brahman Jūjuka, his goatlike beard, broken teeth, bald head with a fringe of wiry hair, and cringing attitude, at once evoke a smile and make one forget the real cruelty of the man, as it is shown in the legend by his inhuman treatment of the young children of Viśvantara, who had given them to him as an act of charity. Similarly, the grotesque features of the demons in Māra's army, who tried to prevent the future Buddha from attaining enlightenment, have at times a caricatural quality, which modifies the almost tragic religious feeling of the scene by the addition of a comic note, incongruous perhaps, but certainly designed to edify the populace.

This sense of humor may be traced in almost every subject, however solemn. The figures of dwarfs with disproportionate

limbs and strange gestures are often seen. Two rollicking minstrels, one playing on a triangular musical instrument, the other holding a double drum under his arm, are a typical example; both these dwarfs, with large paunches, small fat legs, and snub noses, wear a mirthful expression on their irregular features, and their mouths are wide open, as if they were singing or laughing.

The grotesque, in the Renaissance sense of expressive ugliness, is also much appreciated at Ajanta, where the artists indulge in it to portray, though without malice, the features and garb of the faithful bringing offerings to the Buddha. There is a typical example on the wall of the chapel to the left of the antechamber of Vihara II. In the same vihara there is a still more amusing subject, representing two winebibbers, one of whom, from his features and dress, appears to be a foreigner. His sunken cheeks and the thin tuft of beard on his chin give him a somewhat comic appearance, and although he is offering a cup of wine to his boon companion, the latter feels more inclined to pull his beard than take the cup, to judge by the gesture of his hand. Such subjects may be counted by the hundred, but they are so deftly interwoven in the general schemes of the paintings that they do not seem frivolous, and the effect of the whole remains sober and impressive.

The artists of Ajanta were extremely fond of birds and animals, partly because they lived in villages and small towns amidst forests and jungles rich in fauna, but chiefly on account of their religion, which teaches compassion for all living beings.

Among the birds, the swan and the peafowl recur frequently and are shown with both realism and imagination. For example, in the panel showing three peafowl grouped around a lotus creeper (on the ceiling of Vihara XVII), although the tail feathers of the birds have been transformed into ornamental scrolls, the curves of the neck and other parts of the body portray the typical movements and poses of the peafowl. On the walls of Ajanta there are also deer with nimble movements and a meek expression in their eyes; monkeys and apes with mischievous gestures and prankish ways; horses ambling or galloping, with arched necks, short ears, and muzzles that suggest a good breed; elephants with gigantic limbs and majestic gait; bulls with ferocious mien, bent on fighting; and a host of other animals. All are painted with the utmost zeal and show the artists' powers of observation and their skill in life-like representations.

RELIGIOUS IMPORT OF THE SUBJECTS AND MODE OF REPRESENTATION. The discovery of several edicts of Aśoka on the southwestern borders of the Deccan, where gold objects dating from Mauryan times have been found, and the similarity of some of the characters to those in carved and painted inscriptions found in Chaitya X at Ajanta lead to the belief that the people of the Deccan had embraced the Buddhist faith in considerable numbers, either through the religious missions of Aśoka or, even earlier, through the teachings of followers who had been deeply impressed with the humanitarian qualities of the new faith, in contrast to the caste-bound rule of life in the Brahmanic religion.

Aśoka laid great stress in his edicts on the law of piety which should govern the entire universe, including the animal world. This law is profusely illustrated in the religious legends which were painted on the walls of Ajanta over a period of eight centuries (250 B.C. to A.D. 550) which corresponds to the age of greatest Buddhist activity. On the left wall of Chaitya X there is painted the scene of the king with his retinue proceeding to worship a tree bedecked with flags. As this is one of the oldest paintings at Ajanta, it may represent the legend of Aśoka's visit to the sacred tree under which Śākyamuni had received enlightenment some three centuries earlier. Whether this identification be correct or not, a king with his consort is clearly to be seen in adoration before the Bo tree, beneath which a group of women is performing a dance to the sound of music. The dress and ornaments of the dancers resemble those of primitive tribes of India, and it appears that the humanitarian doctrine of the Buddha appealed at first more to the indigenous masses than to the higher castes and

the Indo-Aryans, who retained their Brahmanic faith. The colors of this painting are much faded, and it has been further damaged by the vandalism of the ignorant, who in comparatively recent times cut and scratched their names upon the surface with knives and sharp stones. The composition and the artistic quality of the drawing, however, are of such high order that this subject should rank high among specimens of world art of the same period.

In Rock Edict III Aśoka proclaimed abstention from the slaughter of living creatures to be a meritorious act. This axiom is very effectively illustrated in the story of the king of Benares who was very fond of venison and dined on it daily, until one day he was impressed by the spirit of sacrifice of a stag (the Banyan Deer), who offered his life in exchange for that of a doe. The fresco shows five episodes from the story (the *Nigrodhamyga Jātaka*). The most striking are the *Kitchen Scene*, in which the Sacred Deer (the bodhisattva) has knelt down and placed his neck upon the block ready for slaughter, and a *Forest Scene*, in which the four-footed animals and the birds, including many aquatic species, have assembled before a stupa (Skr. *stūpa*) to show their gratitude to the Banyan Deer, through whose intercession the king of Benares had forbidden the slaying of any creature. The principle thus illustrated is that of ahimsa (Skr. *ahimsā*, noninjury).

Liberality and family piety are admirably taught in the paintings illustrating the *Viśvantara Jātaka* (PL. 43) mentioned above. Viśvantara agreed to the banishment imposed upon him by his loving parents at the persistent request of his subjects, who feared that his unlimited generosity would drain away all the treasure of the kingdom. The prince was undismayed by his parents' command and merely requested them to postpone the date of his banishment by one day, so that "the gift of the seven hundred" might be performed according to his heart's desire. Sañjaya, Viśvantara's father, readily agreed to this request, and the son, after he had celebrated the "gift day," went away into exile, giving away the horses and chariot in which he rode as alms as he went. According to the legend, some gods who wished to test still further the charitable disposition of Viśvantara disguised themselves as poor people and asked the prince for the gift of his wife and children, so that these might help them to alleviate their dire need. Viśvantara was moved by their prayers and gave them his beloved wife and children.

Liberality and compassion, the cardinal principles of the Buddhist faith, are illustrated in various ways on the walls of Ajanta, for their moral significance appealed to the heart and the pictorial qualities to the artistic sense of the beholder. According to the legends, the Buddha had sometimes been born in previous lives as an animal or a reptile, and there are some charming stories in which bonds are established between human beings and other living creatures through their love and sympathy toward one another in time of distress. In Vihara XVII, the *Merciful Stag* is shown saving the life of his pursuer, who had fallen into a deep pit full of water, with none to rescue him. The stag, who was the bodhisattva, was touched by the anguish of his attacker and, mounting him on his own back, drew him out of the pit. He then admonished him and taught him the five virtues (the *Sarabha Jātaka*). In Vihara I, there are two serpent stories (the *Saṅkhapāla* and the *Cāṃpeya Jātaka*), in which the serpent, the future Buddha, tolerates maltreatment by human beings and then shows his gratitude to his redressers, who are respectively the merchant Alāra in the first story and the king of Benares in the second.

The religious views illustrated by the paintings of Ajanta indicate that the Buddha and the bodhisattvas are not gods but human beings, subject to the same impulses and emotions as ordinary men. If they have sublimity, it lies in the virtues they display at the moment of their test in the world. For example, Gautama, revisiting Kapilavastu (see above), was drawn to Yaśodhara's dwelling by his deep love for her. The same intensity of human love is shown in another subject, the *Mahājanaka Jātaka* (PLS. 42, 46), where the prince, having renounced the world, comes to beg at his own door, and his wife, Princess Sivālī, who was so deeply grieved because Mahā-

janaka had become an ascetic that she had fallen seriously ill, recognizes his voice and sends him food arranged upon a tray. Still more human and at the same time sublime is the suggestion made by Viśvantara to his beautiful young wife, Mādrī, when he broke the sad news of his banishment to her, that she should seek another husband for herself and "not pine alone."

In these paintings there is no disdain for the world. On the contrary, there is deep appreciation of all that is beautiful in it: the stately trees with fine foliage; the beautiful flowers and luscious fruits; beasts with sleek fur; mighty elephants with majestic gait; birds with multicolored plumage; and men, women, and children of all types, from kings, queens, ministers, and priests to farmers, tradesmen, and people of the jungle. Only occasionally do any of them appear to be melancholy. In general, they are cheerful, as if life were not irksome to them. The paintings exhibit a fine appreciation, sometimes even sentimental, of palaces, pavilions, cottages, and huts, with inmates engaged in the most varied pursuits. There is also the march of armies and there are battle scenes. Always and everywhere, however, there is the victory of truth. Success in life is assured through love and sympathy, and the longings and needs of man are satisfied by deep faith in the spirit of self-sacrifice and devotion.

The Buddhist doctrine and outlook upon the world as conceived and interpreted by the artists of Ajanta do not point to a rigid asceticism and meditative mode of life. These aspects were assumed only later in Buddhist art in central Asia, China, and, finally, in Japan, where they may be ascribed to the religious ideology and traditions of those countries and not to Buddhist doctrine as interpreted in the land of its origin. Again, although the paintings of Ajanta portray many minor religious or mythical personages, none of them is shown in the demonic or terrific aspect, such as is to be found among the devas, or spirits, of Tibetan and Nepalese Buddhist art. The principal evil spirit to be found at Ajanta is Māra, who is represented in human form with only a wrathful expression to indicate his nature. His bogey-headed satellites provoke laughter rather than awe, and the general effect of this composition is seriocomic, with no savor of demonolatry.

The paintings of Ajanta present many pairs of lovers, but their attitudes and gestures are woven so judiciously into the general scheme that the sober religious effect is not spoiled and there is no sense of frivolity. In this respect the paintings of Ajanta differ from mediaeval Indian sculpture, in which human emotions are represented in a different spirit.

"The standards of beauty of the human body do not, of course, coincide with those of Europe in the classical period, but the drawing of the Ajanta figures is not less effective than those of their European prototypes in regard to feminine grace of form and charm of pose, or masculine vigour and strength, activity and effort. In vividness of expression generally, and in religious feeling in particular the paintings of Ajanta far excel their contemporaneous rivals in Europe." (G. Yazdani, *History of the Deccan*, I).

INFLUENCE OF AJANTA ON ASIATIC PAINTING. The Buddhist mission sent to Ceylon by Aśoka was a complete success. Through the religious fervor of Mahendra (who, according to Indian tradition, was a younger brother of Aśoka, but who was a son of King Tissa, according to local Singhalese tradition), many splendid edifices were built for the service of the new faith. Mahendra settled down in Ceylon and died there about 204 B.C., and not far from the ruins of Anuradhapura there are to be seen the study cell and the tomb of this great Buddhist missionary.

In his *History of Buddhism* J. K. Saunders relates that King Tissa of Ceylon entered into alliance with Aśoka and did all he could to foster the religion of Gautama. He and his successors built the sacred city of Anuradhapura, the great dagobas (Skr. *dhātugarbha*), and many other buildings which were donated to the Buddhist Order.

The architectural grandeur of the Buddhist remains of ancient Anuradhapura is well known, but the great wall paintings of Sigiriya, although they recall their Ajanta prototypes in

technique and decorative detail, lack any comparable ingenuity in design or vividness of expression. The work at Sigiriya appears to belong to the 6th century or even later, when the art of Ajanta had entered into decline and lost its original vigor. For artistic merit, the Sigiriya paintings may be classed with the frescoes at Badami or with the still later paintings at Ellora and Sittanavasal. During the early centuries of the Christian era the number of artists at Ajanta seems to have been very limited, to an extent that did not permit of their traveling about to adorn religious edifices elsewhere. Conditions changed, however, under the Vākāṭaka domination of the Deccan, in the 4th and 5th centuries, because of the connections with the Guptas and the Nāga chiefs of Padmavati (old Gwalior State). So not only do the frescoes at Bagh, in Gwalior State, show the influence of Ajantan art, but some of the paintings, such as the dancing scene from the *Mahājanaka Jātaka* on the left wall of Vihara I at Ajanta, were faithfully copied.

The pictorial fragments found in Afghanistan in recent years, at Hadda and in the surrounding country, distinctly show the influence of Ajanta, but since that region was under the sway of the Indo-Greek kings of Bactria and the Indo-Scythian kings of the Kabul Valley for several centuries, the influence of Hellenistic and Iranic art may also be traced there.

Among the many paintings transported by Sir Aurel Stein from Khotan and now exhibited in the Museum of Central Asiatic Antiquities in Delhi, there is one dating perhaps from the 7th century which on careful examination reveals stylistic affinities with the figures at Ajanta. Even if the plump oval face is a local feature, the figure as a whole shows a tendency toward the mannerism to be found in Ajanta frescoes of the 6th century, especially in the minor ones. The modeling of the arms and elbows and the treatment of the fingers in the Khotanese figure are derived from Ajanta. The third eye, symbolic of inner vision or omniscience and often to be seen in the representations of Indra at Ajanta, is here shown on the joined hands, perhaps to indicate religious devotion. The embroidered skullcap is certainly a local feature, but caps of this shape, not embroidered, are to be seen on the heads of foreigners painted on the walls and ceilings at Ajanta. Near the shoulders of this figure, which may represent an arhat, there are two winglike projections which recall the conventional wings of the little angel hovering in space over the ship that has met with disaster in a sea infested with monsters in the *Pūrṇa Avadāna*, on the right wall of Vihara II. Further similarities may be noticed between the floral designs in the foreground of this painting and those at Ajanta.

The Chinese pilgrim Fa-Hsien visited Khotan toward the end of the 4th century and stayed there almost three months in order to see "the procession of the images." The "images" were probably those of the Buddha and other deities of the Mahayana (Skr. *Mahāyāna*) school, because he writes: "The monks amount to several myriads and most of them are students of the Mahayana."

Fa-Hsien does not refer to the paintings of Khotan, though he mentions the numerous stupas in front of private dwellings and says that the smallest of them was 20 cubits high or more. He saw, however, the "shadow" of the Buddha at Nagarahara, the present-day Jalalabad, after he had traveled several stages westward from Khotan. It is thus described in his *Travels*: "South of the city of Nagarahara there is a cavern in which the Buddha has left his shadow. At a distance of ten paces or so, we see it like the true form of the Buddha, gold in color, with the symbolical marks and signs perfectly clear and shining. On going nearer to it or further off, it becomes less and less like the reality. The kings of neighboring countries have sent able artists to copy the likeness but they have been unable to do so." This description indicates that the so-called "shadow" of the Buddha was a painted representation of the Master which, being executed in the interior of a cavern, could be seen from a certain point only and became dim or invisible if the visitor moved closer or farther away or at times when insufficient sunlight entered the cave to light up the painting.

The monastery known as the Nāgaravihāra at Nagarahara was famous for the Buddhist relics it enshrined, and Chinese

pilgrims visited it on their way to India. Some of them, like Hsüan-Tsang, have described the antiquities of the place in great detail. Among the frescoes found by French archaeologists during their excavations in this area, there is a painting representing a bodhisattva, now in the Kabul Museum. Since the figure holds a lotus in the right hand, it could be identified with Padmapāṇi (Avalokiteśvara), but as in the left hand it is holding the ambrosia vase, it could also be identified with Maitreya, whose attribute this is. In any case, the figure is of great interest from the point of view of Buddhist iconography. The style of painting shows a clear relationship to the Ajanta frescoes, though modified through local influences. Comparison of this bodhisattva with its earlier prototype at Ajanta reveals various affinities with the great figure of the Bodhisattva Padmapāṇi. The lateral swing of the torso from the waistline, suggesting the idea of motion, is identical in the two paintings; the crown of the bodhisattva in the Kabul Museum is not so gorgeous as that of the Ajanta bodhisattva, but the form is the same, and both are bedecked with flowers at the top; the pearl necklace and large earrings are common to both figures, but the flowery form of the earrings in the Kabul fresco suggests a flight of fancy, though it may derive from a different tradition in jewelry. The ropelike ornament worn round the chest and arm produces an undulating effect in both figures, but in the Ajanta painting the ornament is made of twisted strings of pearls, while in the Kabul fresco it is composed of gold disks, which to the casual observer might appear to be a copy of Śiva's garland of human skulls. The treatment of the fingers suggests spirituality and sensibility, often expressed at Ajanta by similar means. The facial expressions, however, present a strong contrast: the bodhisattva at Ajanta displays an aloofness based on spiritual greatness, while the Kabul figure shows a liveliness characteristic of Indo-Chinese ideals of beauty.

It is clear that with the spread of Buddhism the art of Ajanta was systematically studied and adopted during the early centuries of the Christian era in the countries of central Asia and in China, where it assumed new formal aspects and decorative detail stemming from the local traditions in painting and the motifs already in use. Although the representations of Avalokiteśvara and Amitābha in China and Japan may recall their Indian origin in the symbolism, types, and imagery, the contemplative genius of the artists of these two countries has infused their creations with a supernatural grandeur not to be found in the Buddhist paintings of India.

The Buddhist religion and the art associated with it spread rapidly in Tibet, Burma, and Siam, and in other countries of southeast Asia, but the old polytheistic and animistic beliefs in these areas were never entirely eradicated from the minds of those who adopted Mahayana Buddhism. Here the walls of the cave temples are often decorated, over a thick coat of plaster, with paintings representing the various incidents in the life of the Buddha or divinities in their terrible aspect, with dreadful countenances. Similarly the temple of Tashiding, in Sikkim, is decorated with frescoes illustrating the punishments in the various hells, some of which, as Sir Richard Temple remarks in his *Journal*, could illustrate Dante's *Inferno*.

The profoundly human art of Ajanta assumed, then, an ethereal aspect on its entry into China, while in other countries bordering the land of its origin, its chaste and comely form was changed by the emergence of demonic and terrific elements derived from indigenous concepts.

SOME GENERAL ASPECTS OF THE AJANTA PAINTINGS. The paintings of Ajanta are executed with the greatest skill. They are consistent in convention, vivacious and varied in composition and design, and full of the most evident delight in form and color. They are filled with a sense of human values. The artists took pleasure in portraying the occupations and character of man in his varied worldly life, where pursuit of the pleasures of the senses not infrequently leads to disaster and calamity. Liberation from these miseries is always shown to lie in the spirit of sacrifice based upon universal love and sympathy, in which birds, beasts, and reptiles are all included. The artists

of Ajanta tried to delineate a wise balance between the desires of the flesh and the power of the spirit, and it can safely be said that they succeeded eminently in their intention.

There is no doubt, as European scholars have pointed out, that these artists had a realism of their own, a fact which is illustrated by the poses of the figures, their anatomical structure, their ornaments and dress (especially the draperies), and even by the faithful representations of jewelry, vessels, and toilet accessories.

Apart from the serenity and spiritual grace conferred on such figures as those of the *Monk at the Palace Door* (*Mahājānaka Jātaka*) in Vihara I and the *Mother and Child before the Buddha* in Vihara XVII, the ingenuity and technical skill of the artists of Ajanta are to be admired no less in the hundreds of representations of womanhood, painted with ideals of beauty and elegance equal to those which inspired European artists from the 14th to the 17th century. The paintings of Ajanta have an additional significance here, because in them the women are completely natural and free, untrammelled by conventions or formulas. The supple limbs, graceful contours, and spontaneous poses betray no artificiality or affectation. This is natural, unconstrained art, altogether opposed to that based upon an indoor study of models in prescribed poses, without liberty of movement or quiver of real life.

The art of Ajanta is equally successful in expressing sentiments of love. The pairs of lovers painted above the doorway of Vihara XVII are as delicate and human as the works of certain Umbrian painters of the 15th century.

The love of decorative detail is another notable characteristic of the art of Ajanta, where the walls, ceilings, columns, and doorways are adorned with an endless variety of floral, geometric, and mythical designs, all showing imagination and a highly developed technique. On the ceiling of Vihara XVII there is a magnificent example in the form of a decorative band of animal heads and busts emerging from scrolls of vegetation. The animals are extremely realistic, the artist having tried to show their characteristic features and habits; in one panel, depicting a fight between two cat-headed monsters, the painting faithfully reproduces the movements of two real cats engaged in a skirmish.

The artists of Ajanta showed great powers of observation and technical skill in the portrayal of ministers and court Brahmins, and some of their creations may be compared with those of the Dutch masters. There is, for example, the gray head and thoughtful appearance of the minister in the Avalokiteśvara group in Vihara I, or the wrinkled face and softened elderly features of the Brahman in the palace scene where a woman is kneeling at the feet of a king, or the stern, determined expression of the Brahman minister in the *Simhala Avadāna* as he warns the king against marrying the beautiful woman who is really a rakshasa (Skr. *rākṣas*) in disguise.

When the contribution made by the paintings of Ajanta to the evolution, development, and transformation of Buddhist art in central and eastern Asia is taken into account, it can be said that they have an important place not only in India but in the history of the art of the world.

Ghulam YAZDANI

GENERAL CONCLUSIONS. The esthetic evaluation of the Ajanta paintings has varied greatly since the time of their discovery. Its course naturally coincides for the most part with the evolution of the critical judgment to which the entire field of Indian art has been subjected since the first half of the 19th century.

Although the initial interest shown in the paintings was considerable, it was nevertheless vague and somewhat romantic. There was an immediate appreciation of the grandeur of the compositions, of their vivacious coloring, and above all of their historical and archaeological importance as the expression of exceptionally lofty religious sentiments. Indological studies were limited at that time, however, to the religious, literary, and linguistic fields, where the creativity of the Indian genius was more readily appreciated. Other research was chiefly an echo or an offshoot of classical studies, undertaken for any

light that discoveries in India might shed upon the relations that had existed between India and the Greco-Roman world.

The foundations for a more complete and exact evaluation of Indian art were laid, indirectly, by the changing attitude in Western thought toward the figurative canons and the esthetics of classical and Renaissance art and toward classicism in general, and especially by the resultant violent polemic among artists in the past century, which has continued with growing intensity and fresh problems down to the present day. The interest aroused in Europe by Japanese works of art, especially by the paintings, directed attention to Asian art and so to that of India, and this too helped to create an atmosphere favorable to the appreciation of the works at Ajanta.

With the breakdown of Western traditionalism, full esthetic value came to be attributed to non-European works of art, especially when the intuitions of artists were ranged against academic concepts. Principles emerged which could be applied not only to contemporary art but also to art of any place and period, and these developments were reflected after a time in the field of Indology.

This radical, antitraditional evolution had intense and unexpected effects in Indian intellectual circles because of their newly aroused national pride and love of freedom. European influences, good or bad, were consciously repudiated. Groups of critics and artists, encouraged by the example of E. B. Havell, the first all-round scholar of Indian art, looked to local tradition for a means of expression which might restore the arts of the peninsula to their former greatness. Western interest in the religious thought of India, the search after forms outside European tradition, the reception given to Japanese art, and the fact that the Western world had already acquired some consciousness, however confused, of the esthetic value of Indian art, led groups of artists and critics to follow the Moghul tradition. This art, with its flat spatial conception and its psychological perspective, suited to some extent certain European tastes and conformed, although naturally in very different terms, to some of the tenets of Japanese art. But the Moghul tradition, with its fusion of Indo-Iranic currents, seemed foreign to India and drove the artists of various schools to seek a more genuine fount of inspiration in much earlier works of art and, in particular, in the paintings at Ajanta. Thus the conditions necessary for a full appreciation of the Ajanta paintings were brought about not only by scholarly research but also by the desire to renew those procedures, those conventions and forms, created in ancient times but still capable of transformation into a living and vital figurative language.

If it be remembered that even Laurence Binyon had some difficulty in the critical assessment of these paintings, and that Havell, while recognizing their formal value, found in them above all the symbolical expression of religious thought, it will be easy to realize that the modern evaluation of these paintings as among the greatest artistic masterpieces of man has been slow to come. It is part of a broad trend and has been only recently accomplished by the united efforts of scholars and artists, in which Yazdani's work has carried great weight.

The works at Ajanta belong to the category of mural painting, which is fully described and studied in the *Śilpaśāstras*. These Indian technical texts make no reference to paintings on canvas or wood (although the existence of such, even in early times, is definitely indicated by literary references) but accord preeminence to great mural compositions, which were usually destined to be seen by the vast public of the faithful and so were able to exercise an educative influence beyond the scope of smaller works. The interest accorded by the *Śilpa* texts to wall paintings might also have been determined by an industrialization of this type of work, rather than by moral considerations concerned with the subject depicted, the larger scale of the figures, or their placement in temples. The paintings correspond perfectly to the essentially religious character of Indian civilization, but it should not be forgotten that the commissions for these paintings were frequently given to trained craftsmen or artificers — the *śilpin* — who were not simply artisans, because their creative abilities often reached very high levels, but were not artists either in the full sense

of this word, because their interests appear to have been limited. They ought, therefore, to be considered technicians, rather than experimentalists. Thus it is possible that the technical texts limited themselves to giving norms and instructions which would be utilizable only in the case of industrialized art or of art (if it may be so described) conceived for practical purposes. It should be remembered that paintings, decorative sculpture, and buildings were often commissioned as votive offerings by communities, private persons, or kings, and it is to works of this order that wall paintings belong. The pedantic casuistic rulings and the minute descriptions given in the *Śilpa*, accompanied by iconometric and iconographic specifications for the portrayal of divinities, are evidently contrived as an aid to execution rather than as didactic injunctions regarding the pedagogic goal of the figurative arts. Whether or not wall paintings held a predominant position over every other type of painting, as the *Śilpa* texts seem to suggest, the frescoes at Ajanta are still to be numbered among the most important works of art in India, and from the pictorial point of view many of them reach esthetic levels never attained by other contemporary or subsequent works. Distributed over a long period of time, they are generally the work of professional painters, with occasional contributions on the part of the monks. The same rigid anonymity to be found everywhere in Indian art hides the personalities of the various artists, whether they were monks or professionals. To them it was sufficient satisfaction to have acted as the bridge between the metaphysical world and that of phenomena, when they effaced themselves as individuals under the pressure of a religious urge which absorbed them entirely. The work of the monks is discernible only where ingenuousness or repetitiveness, indicating a deficiency in the craft, permits its distinction from that of the professionals, and that does not exclude the possibility that there may have been some exceptionally gifted craftsmen even among the monks.

Most of the finest work belongs to the *Vākāṭaka* period, which owes its fame far more to the paintings at Ajanta than to the minor historical vicissitudes of the dynasty. It belongs, therefore, to the period in which India brought her esthetic ideals to maturity, expressing them in a series of styles which can be described, from the Indian point of view, as being completely classical in creative vigor, in the balance maintained between the different tendencies which arose during their formation, and in the almost complete absence of any recognizable foreign elements. This is also the period in which the theoretical interpretations of esthetic facts were formulated — the definitive recension of the *Nāṭya-Śāstra*, a treatise upon the art of the theater, for example, dates from the 4th to 5th century. The figurative arts, though by Indian standards inferior to those of literature and the theater, were influenced by the new doctrines, absorbed the spirit of the age, and actually contributed to its structure.

Whether or not the artists of Ajanta accepted or knew the doctrine of the *rasa*, certainly the great compositions at Ajanta seem to be animated by the philosophy which holds that certain emotions are innate in the human soul and that all other feelings proper to the individual, always transitory and episodic, derive from these fundamental and universal elements. In the Ajanta paintings, in fact, the expression of a sentiment dominates the incident to which it refers, however important this may be, almost as if the artist wished to express the humorous in itself, to show sorrow, compassion, or detachment from the world as universal and, in a certain sense, abstract categories. Even the male and female figures reflect the tendency to generalize, to omit individual traits. Each figure stands for the idea that the artist wished to express: in one case strength, in another boldness, in yet another wildness or passiveness or responsiveness. The king, as a personage, expresses regality, and the figures of foreigners are characteristic types personifying this or that nation but, even so, not mere masks.

It is possible that there were reciprocal exchanges and influences between the arts of painting and sculpture, for the same anatomical structure and the same values attributed to figures are to be seen in both arts. It might be said that the Indian artist tried to express the inner reality of the figures

represented; certainly he made a constant effort to give concrete form to images visualized in moments of intense feeling and closely connected with the life of the spirit. It may be added that this mode of seeing and recreating subjects and the surrounding world is a general characteristic, intensified by religious motives, of all Indian art. For the rest, this art remains — with those limitations already noted — very realistic. This characteristic may be due to an imaginative capacity that is never detached from a rational spirit intent on ordering, analyzing, and categorizing all the elements of spontaneous experience. And it is perhaps because of this that in the Ajanta figures, as in many others, movement is expressed in a dance rhythm, which punctuates it, analyzes it, and increases its expressive capacity through a conventional code derived from the dance.

It has been pointed out that in the paintings at Ajanta, to whatever period they belong, an absolutely dominant value is attributed to drawing, in obedience to the theory that only the outline of a figure or object is essential to its reproduction; effects of light and shade are considered mere accidental data, extraneous to the object itself. As Siri Gunasinghe points out, a precise terminological differentiation in the technical texts on painting seems to reflect and clarify this theory. The compound term *rūpabheda* (Skr. *rūpa*, form; *bheda*, delimitation), introduced by Yaśodhara as one of the six fundamental canons of painting, expresses the essential value attributed to the outline, in contrast to *sādrśya* (similitude, resemblance), which includes all the details or particulars of an object at the time of its representation. Painting, like sculpture, tends to seize the essentials of an image in order to express its inner value and significance; the *Citrastūtra*, following this theory, considers the drawing or, better still, the harmonious flow of line, to be the most important factor in a painting, although it adds that beyond the perfection of the drawing there lies the grace of pose and expression in human figures.

The Indian tendency referred to above, to divide experience of the world into categories and to order and frame it in various ways, does not in the least exclude the concept of correspondence to the real. Indian literature, beginning with Kālidāsa's *Śakuntalā*, frequently speaks of the wonderful illusive capacities of painters who imitate reality with perfect precision. This evaluation of art as the imitation of nature, latent in many cases but extraordinarily and constantly evident in animal figures, led to a search after the modeling and relief with which the strong outlines are integrated in later painting at Ajanta. To obtain these results, various devices, some more effective than others, were consciously employed, and every trick is documented in the texts. Technically, the system for calculating the dimensions of any object or figure or its component parts is called *mānatraya* (three dimensions) and the list of the three *mānas* (measures), that is, height, breadth, and depth, indicates that one of the painters' fundamental problems was that of escaping from bidimensionality and attaining, through illusion, the third dimension: relief or depth. This attempt at illusion is greatly in evidence at Ajanta, and it is precisely on the basis of these figures that the pictorial activity of ancient India can be clearly differentiated from that of other Asiatic countries, which also attributed a capital importance to the definition in the drawing, even if later on Indian painting was to subordinate relief to less plastic, more decorative effects.

The attempts at modeling, which do not involve the observation of minute detail but tend to capture the state of tension or of quiet which pervades the figure, place the paintings at Ajanta in contrast, also, to those roughly contemporary works of northwest India, Afghanistan, and the distant central Asia offshoots of schools which arose under the Kushan (Skr. *Kuṣāṇa*) dynasty. Actually the mural paintings of Miran in central Asia, dating perhaps from the 4th century, show instances of a conscious effort to master the ways of producing relief and chiaroscuro, but here there is no coherent, organic solution to the problem of illusion in painting, even if some attempts and hints may coincide technically with those at Ajanta. The paintings at Miran, which from their schemes and motifs may be considered products of the Gandhara school and which in-

debatibly show signs of strong Western influence, are much closer to colored drawing than are the late works at Ajanta. Differences are revealed still more clearly in the type of composition. Inspired, like those of Ajanta, by Buddhist subjects, the paintings at Miran follow a definite, narrative conception, which is set down, verse by verse, in each phase of the various incidents. The compositions at Ajanta, on the other hand, achieve a space that is not geometrical but interior and intuitive, uniting in a subtle psychological bond and by a convergence of tones, lines, and figures, all the different, crowded scenes of the episodes represented. The attentive gaze of the spectator is drawn from the central figures, often rendered more prominent by dimensional symbolism, and led from figure to figure to the margins of the scene, which overlaps with the adjoining one through a flanking or superimposition of the figures, so that there is a gradual passage from one episode to another in the story. It is the triumph of a sensibility peculiar to India, to transport the subject interpreted into a timeless world, an eternal world, without any betrayal of plausibility or precision. Perhaps in these characteristics of the Ajanta paintings there may be seen a reflection of that cosmic conception which rejects all particular references to follow, beyond the succession of birth and death, an absolute, constant reality. This reality is not that of an individual but of typical personages, animals, or figures that epitomize all beings of the same genus, species, and degree that ever were or will be.

The ingenuous joy in life, the love for the works of nature, and the interest in the surrounding world which overflow from the great compositions at Ajanta mirror the Buddhist outlook on life, compounded of pity and compassion but also of understanding and joy. This view, though far removed from the speculations of the theorist, was a predominating factor in the spread of the new religion, especially in its reaction against the terrible inflexibility of Brahmanic and Hindu thought. For these reasons the figures at Ajanta, which are the expression of profoundly rational religious thought and which constitute a social advance in other respects, have a happy immediacy that raises them to the highest creative levels reached by man in the field of art.

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Illustrations: PLS. 40-49.

AKKAD. See ASIA, WEST: ANCIENT ART; MESOPOTAMIA.

ALASKA. Geographically Alaska forms a huge peninsula in the northwestern corner of the North American continent bordering on Canada. In 1958 it became one of the United States, having been previously a United States territory. It includes the Aleutian Islands, some islands in the Bering Sea, and the coastal area north of Dixon Entrance. This coastal strip constitutes the northern part of what is known as the Northwest Coast area of the North American cultures.

As may be expected from a country which covers an area of 586,400 square miles and extends from the Temperate into the Arctic Zone, there are considerable differences in the natural conditions from one end of the country to the other. The most striking difference is between the heavily forested southeast corner and the barren coast land, mostly tundra, which forms a rather dull frame around the often picturesque interior. This is dominated by snow-covered mountain ranges with the towering Mount McKinley (20,300 ft.) as the highest peak. The mountain ranges are separated by river plains which are made almost impassable in summertime by numerous lakes, river branches, swamps, and dense growths of spruce, and are covered by deep, soft snow in the winter.

What is called Alaskan art belongs exclusively to the indigenous peoples. For the past 200 years white people have settled in Alaska in increasing numbers, but without giving rise to any distinctive art forms. Not counting the whites, two races have divided the country between them, the Eskimos (see **ESKIMO CULTURES**) including the related Aleuts, and the Indians (see **NORTH AMERICAN CULTURES**). Of these the first group occupy the barren coastal areas and the Indians the interior and the southeast coast. Only very few Eskimos live in forested areas, while on the other hand the Indians seldom venture outside the forest belt; in other words, the

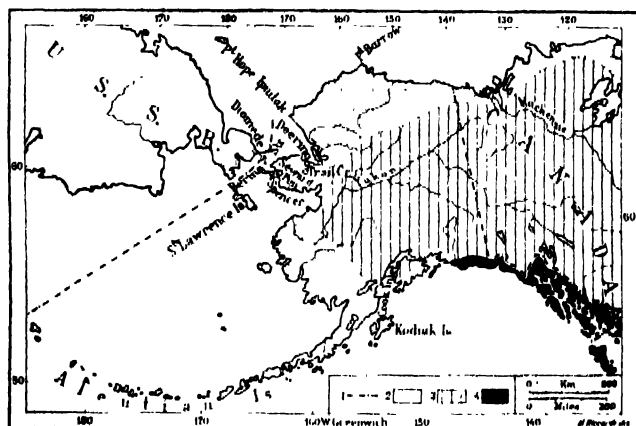
timber line is also roughly the border between the Eskimos and the Indians. Among the Indians a further distinction should be made between the Athapascans of the interior and the culturally and linguistically different Tlingit and Haida of southeastern Alaska, the two northernmost groups of the Northwest Coast culture area. We may thus in Alaska distinguish between three culture areas, (1) the Eskimo-Aleut, (2) the Athapaskan, and (3) the Alaskan components of the Northwest Coast culture area, and this distinction also applies to the art. There has, of course, been interchange of culture traits and also of art forms between the three areas, but not to a great extent. Most conspicuous are the influence of the Tlingit on the neighboring Eskimo-Aleut culture and the adoption of Eskimo art by the Athapascans of the lower Yukon.

In the Eskimo-Aleut area, in contrast to the two other areas, we have a fairly good knowledge of the art in prehistoric times, the result of systematic archaeological excavations which began in 1926. The earliest piece of art found so far in Alaska comes from a limestone cave at Trail Creek on Seward Peninsula. It is an arrowhead of bone, the surface of which is covered by an engraved ornamentation reminiscent of the art of the north European Maglemose culture. Of much later date are the finds from St. Lawrence Island and Ipiutak, the two most famous sites for prehistoric Eskimo art.

In 1926 discoveries were made on St. Lawrence Island and Little Diomed Island of an ancient Eskimo culture called the "Bering Sea culture," which is distinguished by elaborate carvings and surface decorations in walrus ivory. Subsequent excavations, particularly on St. Lawrence Island but also on the neighboring, small Puvuk Islands, revealed a sequence of prehistoric cultures or culture phases distinguishable primarily by the change in the decorative art. The earliest phase, the Okvik, is characterized by either sketchy or deeply cut straight or curved lines with frequent use of short spurs and nucleated circles with radiating lines. Characteristic of the sculptural art are human figures carved in walrus ivory. In the following or Old Bering Sea phase, the decorative art reached its peak. The curvilinear design is firm in its composition and fits the shape of the object perfectly. Nucleated, often concentric circles and ellipses are a much-used motif, frequently appearing in connection with a rounded elevation and representing eyes. In the next phase, the Puvuk, the art style stiffens into conventional patterns, the circles are compass-made, and the lines are of equal width and depth. The decline in decorative as well as sculptural art continued in the following phases, though the art of ivory carving never died out completely. Apart from a few scattered specimens found on the Alaskan mainland these characteristic art forms seem to be limited to the islands mentioned above and to the Asiatic side of the Bering Strait where they probably have their main distribution.

In 1939 a huge site consisting of 575 house ruins and 138 burial mounds was discovered at Ipiutak at Point Hope in northern Alaska. One of the most striking features of this in many respects unique Ipiutak culture is the art. It is reminiscent of and related to Okvik and Old Bering Sea art and yet it has a stamp of its own which is reflected in surface decoration as well as in sculpture. Characteristic of the surface decoration on objects of caribou antler and walrus ivory is a wide range of patterns, from a simple line design to the complex refined, curvilinear style of the Old Bering Sea art. It is, however, in sculptural art that the Ipiutak craftsmen demonstrated their greatest skill and originality, above all in the fantastic, peculiarly shaped probably symbolic objects in the group called "openwork carvings." Characteristic of Ipiutak art is the frequent use of zoomorphic motifs in particular animal heads, which, with griffin heads, the skeleton motif, a pear-shaped boss on the haunches of animal figures, and the bear motif known as "Pianobor," leave no doubt about the close relationship between Ipiutak art and the Scytho-Siberian animal style. In addition to the site at Point Hope, Ipiutak culture has been found at Deering and Point Spencer on Seward Peninsula.

The art of later prehistoric cultures in northern Alaska is limited to a rather simple, though skillfully executed surface decoration and some carvings in the round, mostly of animals. Very few examples of prehistoric art are known from the Bering Sea area, but from Cook Inlet on the Pacific coast there are beautifully carved stone lamps with anthropomorphic and zoomorphic figures, rock paintings, and a few animal and human figures carved in walrus ivory. Archaeological excavations on Kodiak Island have revealed carved stone lamps, human faces carved in ivory and bone, and a rather simple and sketchy surface decoration of bone artifacts with straight lines and concentric circles as predominating motifs. Petroglyphs are also found on Kodiak Island. In the Aleutian Islands, which have many cultural traits in common with Kodiak Island, similarly carved human faces and, in addition, animal and human figures carved in bone and ivory have been found. In the early prehistoric period bone and ivory artifacts were decorated with deeply cut straight lines forming characteristic patterns, while in later periods a nucleated circle is the most frequently used motif.



Alaska, ethnic and cultural divisions. Key: (1) Territorial boundary; (2) Eskimos; (3) Athapascans; (4) Tlingit and Haida.

A distinction between archaeology and ethnography in the Eskimo area is actually artificial and meaningless, because the entry of the Eskimos into the light of history was not marked by a sudden change in their culture. The old traditions and the old skill lived on and were only gradually changed as a result of contact with the white man. The distinction made here refers only to the way in which pieces of art were obtained, whether by excavation or by purchase or barter. Taken as a whole, the Alaskan Eskimos and the Aleuts are the best craftsmen and the most artistic of all Eskimos and may in certain respects be considered as a unit. They all make excellent carvings in walrus ivory and wood, they are skillful in ornamenting their implements with artistic patterns and their garments with skin embroidery. It is, however, possible from a cultural and artistic point of view to distinguish between three areas, the characteristics of which are outlined in the following: The art of northern Alaska (to lower Yukon) comprises plain, usually monochrome and anthropomorphic wooden masks; simple anthropomorphic and zoomorphic ivory carvings; naturalistic motifs and simple line decoration engraved on ivory; rather primitive painting on wood. Western Alaska has fantastic, composite, polychrome wooden masks with frequent use of zoomorphic motifs; naturalistic and fantastic animal carvings in ivory and wood; concentric, nucleated circles as the predominant motif in decorative art; fantastic animals painted on wood and skin; use of decorated hunting helmets and eyeshades. The Pacific coast and Aleutian Islands are characterized by a blending of traits from the two neighboring cultural areas: on one hand, from western Alaska, the use of decorated hunting helmets and eyeshades, ivory carvings mostly of animals, geometric design in surface decoration; on the other hand, from the Northwest Coast Indians, polychrome art on hunting helmets and basketry hats, ornamented basketry, carved wooden bowls and spoons of mountain-goat horn, inlay of shell beads.

In the second Alaskan culture area, the Athapaskan, no archaeological objects of art have been found. Except for the Ingalik of the lower Yukon, who as neighbors to the Eskimos have adopted their art forms, the art of the Athapaskan is virtually limited to decoration of their skin clothing with colored porcupine quills, glass beads, and dentalium shells, although a few examples of engraved designs and decorated basketry are known.

As for the third area, the Tlingit and the Haida are only two of a number of groups or "nations" which occupy the northwest coast of North America. This area, partly in Canadian territory, forms a cultural unit and is one of the foremost art areas of the American Indian (see CANADA). The artistic production is notably more varied and more developed than the other Alaskan art. It includes totem poles, masks, ceremonial rattles, wooden boxes and dishes beautifully carved and often painted in polychrome, goat-horn ladles and spoons of graceful shape decorated with incised designs, woolen cloth woven with both naturalistic and stylized zoomorphic patterns, etc.

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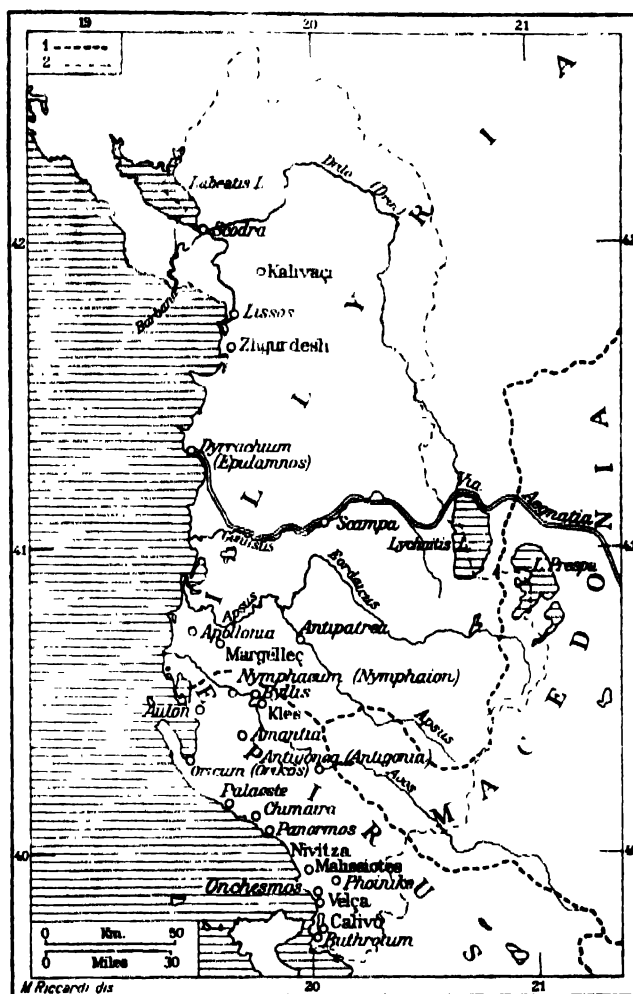
Helge LARSEN

Illustration: 1 fig. in text.

ALBANIA. Modern Albania (Shqipni), as a crossroad of several civilizations, preserves remains of prehistoric periods, of Greek and Roman antiquity, of the Middle Ages, and of the period of Turkish domination, as well as traces of more recent Western European influences.

SUMMARY. Cultural and monumental phases (col. 182): *Antiquity; The medieval and modern periods*. Principal centers (col. 184).

CULTURAL AND MONUMENTAL PHASES. *Antiquity.* Prehistoric objects chiefly of the Iron Age have been discovered in Shkodër (Scutari), Finig, and Buthrotum (Butrinto). Neolithic painted pot-



Ancient Albania. Key: (1) Boundaries of the Roman provinces in the Augustan era; (2) modern boundaries of Albania.

tery unearthed in Velca shows strong affinities with the later aeneolithic of Apulia. In Kalaja Dalmaces can be seen an extensive cemetery consisting of tumuli and graves in which were found torques, amulets, buckles, earrings, pendants, and bracelets, all of the Iron Age. Together with these were found some late Roman coins, stones with Greek inscriptions, and in a metal setting a stone bearing a representation of Hermes Psychopompos, the conductor of souls to the afterworld. It is generally agreed that these are Illyrian tombs of a retarded phase of the late Iron Age, though chronologically many of them date from the late Roman period of the 4th and 5th centuries. There were three waves of Indo-European peoples in the Balkan peninsula. The first, prior to the 2d millennium B.C., was made up of the so-called "Proto-Illyrian" peoples, and the peoples of the second wave belonged to the same racial stock. Those of the third were the so-called "Hylloi," whose very name is an indication of their Illyrian origins. These latter, however, were forced to migrate to the south, to Greece and to the islands, where they came to be called "Dorian" from another population group, racially related though stemming from the Lausitz peoples. The term "Lausitz"

designates a late Bronze Age civilization that flourished in Central Europe in the region between the Elbe and the Oder, in which linguists have recognized the Illyrian origin of many names.

From the very dawn of history, the Greeks were interested in the lands that lay on the eastern Adriatic Sea. Commerce was established in certain of these localities, which consequently grew into flourishing cities. Exact historical data regarding these centers are lacking, for facts have been confused with legend and myth, which attribute a glorious origin to many of them. Among these localities are Lissos, Nymphaion, Oricum, and various cities of the Vjosë Valley. These are the sites mentioned by Caesar (*De Bello Civili*, III, 12, 4; III, 40, 4) as the "reliquiae finitimae civitates" that fell to him at the same time as Amantia and Byllis, which have been identified with certainty, one with Piliça and the other with Gradišta, near Hekali. Kles, a village near Byllis, is surrounded with monumental Hellenistic walls. Other more or less impressive walls can also be seen in Qytet near Piliça, in Kalivaci, and in Nivitzia Malisiatas. The problem of Damastion and its silver mines is still unsolved. Also still unknown are the locations of most of the sites which Polybius (V, 108) declares to have been conquered by Philip V of Macedon; only those which he calls Enchelee ("resounding"), in the region of Lacus Lychnidus or Lychnitis (Lake Ohrid), have been identified. Other still partially excavated centers along the Adriatic-Ionian coast are Chimaira (modern Himara) and Panormos. Near the Logora Pass was Palaeastae, the modern Paliasa, where in 49 B.C. Caesar disembarked for his attack on Oricum. Many other centers await excavation or, in any case, identification. Among the more noteworthy are Shkodër (Scodra), Berat (Antipatria), Tepelene (Antigonia), and Elbasan (Scampa). The so-called "Illyrian acropolis" are also numerous. These generally crown high hills and mountains and are circled by mighty walls; among these are Calivò, Zhgurdes, Margëllëç, and, the most important, Kalaja Rrmait near Gramsh.

Pellegrino Claudio SESTIERI

The medieval and modern periods. With the exception of some native folk tradition, Albania lacks autonomy and continuity of artistic development. Although various civilizations have been superimposed in successive ages, there has been little substantial assimilation or original elaboration. There were occasional Italian influences, chiefly in the 14th and 15th centuries, and there were more significant Byzantine influences with but scant traces of Turkish influence. The Aegnatian Way, which separates the northern and southern parts of the country, was constructed by the Romans. About the year 1000, Albania, after varied fortunes under Byzantium, became an episcopal seat and fell within the radius of economic expansion of Venice and Amalfi. The Normans, the Swabians, the Angevins, the Venetians themselves, and the Aragonese kept alive contacts between Albania and the Western world. After the death of Scanderbeg, in the second half of the 15th century, Albania was occupied by the Turks and remained culturally isolated until about 1912. In the following decades, Albania once more entered the Western orbit but subsequently fell within the Soviet sphere of influence. Except for such cities as Ulcinj and Elbasan, with their generally Oriental appearance, accentuated by minarets, modern Albanian cities resemble Western ones in the monumentality of their public buildings. On the Adriatic shores there are several Italianate centers such as Lezhë (Alessio). The more important cities are planned on the basis of a system of great parallel arteries, as at Shkodër, or a pattern of wide streets lined with houses, buildings, and ground-floor shops (Sarandë). Others are terraced on hillsides, with characteristic arrangements of verandas, as at Berat and Tepelene. Most of the surviving castles, citadels, and walls are of Venetian origin and are generally in ruins. Some traces of the art of the Exarchate of Ravenna are visible in the region of Shkodër, but the Tuscan-Venetian influence (Michelozzo, Laurana, and Baldovinetti worked in Dalmatia) found in the coastal regions disappears in the interior. Churches of the Byzantinized south show some affinities with Macedonian, Serbian, or Romanian forms or with those of Epirus of the Ionian Islands, especially of Corfu (Antivari, Sciassi, Rubigu, Dagno). These Orthodox structures are basilicas, usually with square bell towers. Most of the churches—for example, St. Nicholas of Lezhë—have been transformed into mosques by the addition of a minaret. The Catholic churches are generally modern and of the Latin-cross type. The largest of these can be seen in Shkodër. There are many monasteries; the rather numerous Orthodox ones, dating from the 14th century, are whole complexes comprising an encircling wall, a church, cloisters, a hospice, an elementary school, and, usually near the entrance, a cemetery. There are about 70 of these, half of them located in the region of Gjinokastër. There exist more than a thousand mosques designed according to a plan established during the course of the Turkish domination. Some church interiors contain poorly preserved frescoes. The decora-

tions generally date from the 19th or 20th centuries and are painted in the Byzantine style; these may overlie earlier 17th-century frescoes.

The rustic architecture, on the other hand, is of particular interest. In the north the prevailing type consists of a kind of square house of wood or stone, and in the marshy regions there are huts grouped into farms (*ciftlik*). In central Albania and in Musacchia, the houses are extremely simple, consisting of a wooden skeleton coated with clay, usually of two stories with outside stairways, balconies, and jutting roofs. The earthen *kulla*, with one or two floors, square, massive, and fortresslike, is typical. Large examples can be found in Krujë (Krija) and in Mirdiza. In south-central Albania the *kulla* is larger and rectangular, has corner towers, and is divided into several enclosures. In the villages of east-central Albania there are many white houses of Macedonian type with large windows and jutting roofs. In the southern seaside area the huts, or *calve*, have monumental conical chimneys and are decorated. These date from the 19th century, as do the richly decorated episcopal pulpits and cupolas. A kind of 19th-century Italian manner can be traced in the modern style, especially in the monumental architecture of the larger cities. The characteristic painting and sculpture, on the other hand, belong to a realistic current deeply rooted in popular tradition.

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PRINCIPAL CENTERS. Apollonia (Lat., Apollonia, Gr., Ἀπολλωνία). The city is on a plain and is surrounded by walls, parts of which can be seen, forming a great irregular rectangle. The acropolis rises almost in the center of the southern side. Below it were discovered terraces, a portico, a small sanctuary, and not far away a covered theater, near which can be seen the monument of the agonothetes. Other unearthed buildings include a gymnasium, an impressive tower forming part of the 5th-century fortifications, and a great sepulcher in the form of a Corinthian temple in *antis* with sculpture dating from the period of Antoninus Pius. Also discovered originally in Apollonia are the following noteworthy sculptures: the satyr Anapauomenos (Paris, Louvre), a head of Ares of the Ludovisi type (Vienna, Kunsthist. Mus.), a Skopasian head of Melenger (Tirane, Library), Hellenistic statuettes of Artemis, two archaic antefixes in the shape of female heads, and various terra cottas. In addition there are characteristic steles, generally temple-shaped with pediments and figured relief decoration, which date from the 3d and 2d centuries B.C. and clearly show Tarentine influence.

The 14th-century monastery of Pojani, near the ancient site of Apollonia, has a large atrium with small arches resting upon capitals of Byzantine influence. The church is Byzantine in style with a Lombard porch and a cylindrical cupola.

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Ardenitza. The monastery, near Durrës, of Byzantine style and similar to that of Apollonia, is noteworthy. At the entrance is the date 1474. Between 1744 and 1754 the portico and decorative details were remodeled.

Berat (ancient Antipatria, later Pulcheriopolis). At one time a Byzantine possession, in 1435 it became Serbian and finally, in 1440,

Turkish. Characteristic of this center are the white houses with their broadly sloping roofs and glass verandas. There are also many remains dating from the several periods of external domination and many Orthodox and Byzantine churches of uncertain date. The fortress, apparently from the early Byzantine period, was rebuilt by Michael Comnenus and in the 15th century by the Venetians. There is a Byzantine church, St. Michael, in which the huge cupola is frescoed with figures of the apostles (restored). The Mosque of the Bachelors, constructed in 1492 under the Sultan Bajazet II (1481-1512), is painted with floral decorations framing palaces, landscapes, and seascapes, presumably dating from the 18th century. The Monastery of Sheik Hasan is an imposing rectangular building containing fine wooden ceilings of typical Albanian workmanship. The Kurd Pasha bridge dates from 1780 and has a later addition of seven arches. Also noteworthy in the area are the villages of Ballsh, an old episcopal seat founded in the 14th century by the Ballsha family, and of Byllis (near Hekali) with its fortress on the acropolis restored by Justinian.

Buthrotum (Gr., Βουθρωτόν, It., Butrinto). Italian excavations have uncovered the acropolis and a small section of the city below. In the acropolis walls are remarkable entrance gates: the bent entrance gate, the Lion Gate, and the Seacoast Gate. The theater preserves the entire Greek *cavea* while the stage is of the Roman period. Nearby is a shrine dedicated to Aesculapius built over an earlier Greek temple. Beyond the large nymphaeum and the sacred well dedicated to the nymphs by Junia Rufina is the baptistery, with polychrome mosaics. Beneath the circular hall of the baptistery was discovered a bathing pool in the form of a Greek cross, which must have been part of a bath. There is an archaistic relief of Parian marble, perhaps from the Amaltheion, representing a winged Nike with a trophy. Many sculptures were found in the theater: the so-called "Goddess" in the Museo Nazionale Romano, which is thought to represent a 4th-century head of Apollo placed upon a draped female torso of Phidian style; a copy of a large feminine figure from Herculaneum; a figure of a Muse, a copy of a Hellenistic original; two warrior statues, one of which is signed by Sosikles the Athenian; and, finally, portrait busts of Augustus and Agrippa.

There are numerous medieval remains. This center, Byzantine from the 4th century onward, passed into the possession of the Angevins in 1279, then to Philip of Tarentum, and finally to Venice from 1386 until the 18th century.

The monuments on the acropolis include a triapsidal Byzantine church with a nave and two aisles, and a triangular castle with triple boundary walls of Venetian construction. In the city there are two small Byzantine churches. There is also an archaeological museum.

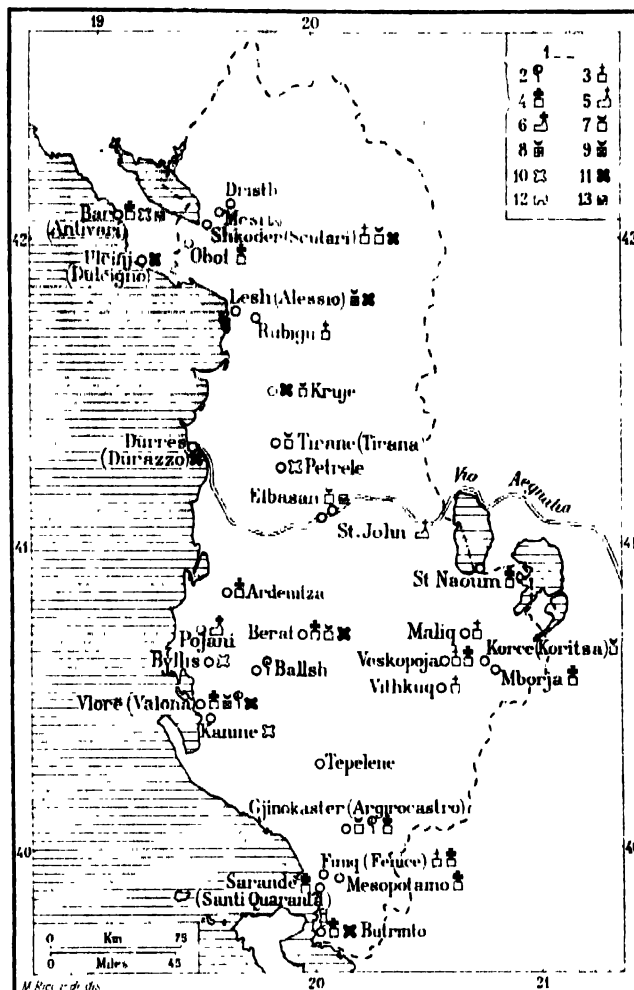
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Durrës (Gr., Δυρράχιον, Lat., Dyrrachium, It., Durazzo). According to historical data, this is a Corinthian city founded in 627 B.C.; but may be of older, native origin (Appianus, *Bellum Civile*, II, 39). Several Roman monuments are known only from inscriptions: the aqueduct, the library, the amphitheater, and the Temple of Minerva. Among the more important finds are a mosaic pavement with a representation of a female head above a lily; the torso of a kouroi, now lost, which was seen by Praschniker; several fragments of pottery panels similar to the pinaces (tablets) of Locri; marble heads; and reliefs, including a monumental relief from a triumphal arch of the 3d century with a representation of a winged Victory between two trophies and barbarian prisoners. The center was Venetian from 1392 to 1501 and subsequently Turkish. Most of the churches were turned into mosques. The town walls with large cylindrical bastions were built by the Venetians, as were parts of the castle, now in ruins. The Konak, ancient royal palace, has been demolished. There are many modern buildings. In the city hall are a number of antiquities discovered by chance.

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Elbasan (ancient Scampa, the 5th-century episcopal seat). It was destroyed by the Bulgarians in the 10th century, became the fief of the Topia in the 14th century, and later was Venetian. This city has an Oriental and Moslem aspect. The streets are flanked

by white walls that conceal the houses, set within orchards and gardens. There are many mosques from the late 14th century. The Convent of St. John, dedicated to St. Vladimir, was perhaps built by C. Topia in 1380 over a preexisting convent dating from about 1000. The fortress, built by Mohammed II in 1466 against Scanderbeg and the Venetians, was rebuilt in 1832; it is rectangular in plan with large towers at the corners and also lesser towers. There is a museum of archaeology and folklore.



Medieval and modern Albania. Key: (1) Boundaries of modern Albania; (2) seat of bishopric; (3) place with Roman Catholic church; (4) place with Orthodox church; (5) Roman Catholic monastery; (6) Orthodox church; (7) mosque; (8) Roman Catholic church transformed into mosque; (9) Orthodox church transformed into mosque; (10) castle or fortified place; (11) Venetian castle or fortified place; (12) bridge; (13) Islamic monument.

Finik (It., Fenice). Apparently founded by the Epirotic peoples. On the acropolis are the ruins of Phoinike (Phoenice), described by Polybius as the most heavily fortified city in Epirus. Byzantine monuments are preserved here: a baptistery remodeled from a treasury built in the 4th century B.C. and a small 11th-century church.

Gjinokastër. Founded by Gin Buta Spata in the 4th century with material from the nearby Hadrianopolis. At one time the see of a bishop, the center became Turkish in 1460, probably after a period of Venetian domination. Of interest are the many houses painted blue or white set upon deep-blue plinths with Arabic monograms. Also common is the *kulla* type, with vents on the ground floor and gratings across the upper windows. Several of the mosques may be dated about 1700. A Venetian citadel and castle were restored in 1811 by Ali Pasha of Tepelene.

Kanina (Kanine). This center has a ruined Byzantine fortress.

Kopliku. In northern Albania. The church contains fragments of a shrine of the 15th century of SS. George and Procopius.

Korçe (Koritsa, Coritsa). Mention of this center is found in documents dating from 1280. The city was rebuilt after its destruction by Murat II in 1440. The mosque, built in 1482, together with its frescoes, has been restored three times. In the neighboring Mbërja is the Byzantine Church of the Assumption, originally built in 898 and rebuilt and decorated with frescoes in 1391. Of some interest are the medieval ruins at Vithkuq, founded about 1100, and at Maligrad, a small island in Lake Prespa, where there are 9th- and 10th-century stone churches, among them the 9th-century Church of St. Paul.

Krujë. This is possibly the Albanopolis of Ptolemy. In the 13th century it was called Bistrum Albanum, and in the 14th it became the fief of the Topia. Scanderbeg was born there in 1403, and the city was taken by the Turks in 1410. A Venetian fortress of triangular plan with a Turkish superstructure has been preserved. There are the Mosque of Mohammed II and the Mosque of Murad Dey, dated 1533. There is a restored fountain from 1446.

Lesh. The Church of St. Mary, dated 1240 by a spurious inscription, is known only from the 15th century. It was destroyed in 1918 and rebuilt as a convent. The Romanesque Church of St. Nicholas was transformed into a mosque and is the burial place of Scanderbeg. There are remains of ancient walls, some of them Venetian on older foundations.

Mesopotamo. There is a well-preserved church built about 1000, adorned with cupolas, tile decorations, and bas-reliefs of fantastic animals.

Rubigu. A small rectangular apsidal church with an inscription from 1472 contains frescoes in very bad condition.

St. Naoum. This center, near Lake Ohrid, has a Byzantine monastery of the Greek Orthodox rite dating from before the 15th century.

Sarandë (Santi Quaranta; ancient Onchesmos). There are ruins of a Byzantine church with a porch, a nave terminating in an apse, and three chapels on each side.

Sciassi. Remains of the ancient Sfakia, with numerous churches. The church dedicated to the Virgin of Shkodër has a Romanesque façade of Istrian stone.

Shkodër (Scutari). This important crossroad of western Adriatic civilization was Venetian from 1396 to 1479. The oldest houses are fortified by stone walls with slit windows and massive doorways on the side streets. The interiors, with their wooden ceilings and wall cupboards, recall the country dwellings of the Veneto, although the tub-shaped fireplaces are of the Albanian type. The Mosque of the Piombi, or Colombi, dates from 1768. The Church of the Virgin of Good Counsel, built over an older structure, contained, according to legend, a Madonna that "flew" to Genazzano in 1476. The Catholic cathedral, built in 1856, was restored in 1898. A well-head in lingering Gothic style of the first half of the 15th century is the work of the shop of Bartolomeo Bon, and another is from the shop of Pietro Lombardo. In the neighborhood can be seen remarkable remains of ancient Drivastum (Drishti, Drishti), a fortified seat of a bishop with five churches, which was acquired by Venice in 1396 and by the Turks in 1477. On the nearby Kiri River is the Venetian bridge of Mesi (Ura Mesit), with five arches, the center one ogival and about 88 ft. high. More significant is Oboti, with the ruins of the Church of SS. Sergius and Bacchus, combining Romanesque and ogive forms; it was constructed in 1292 by Queen Helena, widow of Urosh I. The citadel of Rosafat, remodeled in the 14th century by the Venetians Andrea and Francesco Veniero and Melchiorre of Imola, was later transformed by the Turks and partly destroyed by earthquakes in the 19th century; it has an elliptical ground plan with three encircling walls and nine bastions.

Tiranë. Founded at the beginning of the 18th century by Suleiman Pasha, the city was reorganized on a modern city plan in 1940. There is the Mosque of Ethem Bey, begun in 1791 and completed in 1819, the old mosque founded by Suleiman Pasha, and a museum containing many valuable archaeological finds. There are numerous early-20th-century buildings erected by the Italians and post-World War II constructions in the Soviet style. In the neighborhood is Petrele, with the ruins of a triangular castle with corner towers, conquered by Scanderbeg in 1443.

Vaudejës. Church of the Virgin of Dagno, probably from the period of Scanderbeg, similar in design to SS. Sergius and Bacchus on the Adriatic coast. There is an image of the Virgin Platytera in the apse, as well as superimposed layers of frescoes. Nearby are the remains of the fortress of Dagno, which was recorded in a Serbian document of 1198.

Veskojaja. Founded in 1300 as Moscopolis. The Church of St. Nicholas, built in the 18th century according to the traditional Byzantine scheme, has a wooden iconostasis from 1743 and a bishop's throne from 1758. The Church of St. Anastasia dates from the 18th century.

Vierde. On the left bank of the Drin. In it are the ruins of an ancient seat of a bishop.

Vlonë (Vlona, Valona). The first notice of this locality, the ancient Greek Aulon, appears in Ptolemy (III, 12-2). The seat of a bishop in the 5th century, it fell in 1345 to the Serbians and then belonged to Venice until 1464, when it passed to the Turks. In the 20th century it underwent industrial development. The Byzantine church has been transformed into a Murakiyah mosque.

The list of cities is by P. C. Seastieri and M. Abbruzzese.

Illustrations: 2 figs. in text.

ALBERTI, LEON BATTISTA. Alberti turned late to architecture when he was already famous in the most diverse fields of knowledge and the arts; this circumstance invests his creative activity with singular and puzzling overtones.

He was the illegitimate son of the Florentine Lorenzo Alberti, who had been exiled in 1401 by the Albizzi faction. Leon Battista was probably born in Genoa in 1404 and at ten was sent to Barzizza in Padua, where he received a Humanistic education. He studied law at the University of Bologna, then gave himself up to the study of mathematics, literature, and philosophy. He wrote poetry as well as works of a scientific or moralizing character; aspiring to make himself into the Renaissance ideal of the "universal man," he multiplied his interests in the most varied disciplines and acquired an encyclopedic knowledge.

In 1428, when the Signoria of Florence revoked the ban against his family, Alberti discovered architecture, but the encounter was brief in duration. Obligated to seek employment under high prelates, he accompanied them on journeys perhaps as far as Burgundy and Germany; from 1431 to 1434 he resided in Rome as secretary to the rector of the papal chancery and as papal abbreviator. At this time, when he was already 30, he began a systematic investigation of "things connected with building," and he dedicated himself to the *Descriptio urbis Romae*, measuring the ancient monuments with "scrupulous diligence" by means of instruments he had himself devised. Forced to flee Rome with the Curia in 1434, he reached Florence, where he was introduced in artistic circles and soon became absorbed in the investigations and excitements of the early Renaissance. The dedication to Brunelleschi of his treatise *Della pittura* is proof of his enthusiasm for the great Florentine architect. Besides writing, Alberti drew, painted, and carved. Architecture, however, remained for him a field of purely theoretical study and research for the next 10 years. In 1436 he went to Bologna in the retinue of Eugenius IV and thence probably for brief sojourns to Venice and Perugia. In 1438 we find him at the Council of Ferrara, where he met Lionello d'Este, from whom he received for the first time recognition as a man competent in the arts and probably even in architecture. Be that as it may, he was recalled to Ferrara in 1443 to judge the competition for the monument to Nicholas III d'Este, and in all probability Lionello accepted his suggestions for the designs for the pedestal, the so-called "Arco del Cavallo," and the bell tower of the cathedral. This period proved to be one of the most serene and fruitful of Alberti's life. His taste for architectural invention developed and grew; in fact, it was never to leave him.

Upon his return to Rome and despite his work for the papal court, Alberti returned with renewed eagerness to his study of ancient monuments, and he compiled his important treatise in 10 books, *De re aedificatoria*, which he offered in 1452 to Pope Nicholas V. In these same years he faced the complicated problem of raising the ancient Roman ships from Lake Nemi; he was consulted about the tottering Basilica of St. Peter; he directed the restoration of S. Stefano Rotondo, of S. Teodoro, of S. Prassede, of S. Maria Maggiore, and of many other churches; he supervised the new fortifications and probably

also the repairs of the aqueduct of the Acqua Vergine and the construction of its outlet in the first Trevi Fountain; and he designed the roofing that was to cover the bridge of S. Angelo. He became, in short, the expert on whom Nicholas V relied to give shape to his building programs and to his impressive ideas for the replanning of the city of Rome. It was at this period that Alberti undertook his most outstanding architectural works outside of Rome. In 1447 Matteo de' Pasti had begun the transformation of S. Francesco in Rimini, now known as the Tempio Malatestiano, whose marble sheath is dated 1450 on the frieze of the façade and on the medal that reproduces its design (PLS. 51, 52). The Rucellai Palace in the Via della Vigna Nuova in Florence (PLS. 54, 55) is generally dated between 1445 and 1451 for lack of satisfactory documentation. Uncertain also are the dates of his later works. It is generally believed that he began to complete the façade of S. Maria Novella in Florence in 1456 (PL. 53), but the inscription on the upper architrave indicates that it was finished in 1470; the Rucellai Chapel with the Shrine of the Holy Sepulcher (PL. 50), also in Florence, is of 1467. Meantime, in 1459 he had moved to Mantua in the retinue of Pius II Piccolomini; he remained there even when the Pope returned to Rome, and went back again in 1463, in 1470, and in the winter of 1471. Freed from the office of apostolic abbreviator in 1464, he had more time both in Rome and on the site to attend to the works commissioned by Ludovico Gonzaga: S. Sebastiano in Mantua (PL. 56 and FIGS. 196, 200), planned in 1460 but modified by Alberti 10 years later; S. Andrea in the same city (PLS. 57, 58 and FIG. 204), planned in 1470 and begun two years later by Luca Fancelli; and finally the rotunda of SS. Annunziata in Florence (PL. 58), also designed about 1470, which symbolically concludes, in a fragmentary and perplexing way, Alberti's role as an architect, two years before his death.

This rapid biographical sketch points up the uniqueness of Alberti the architect, for he did not begin to practice until the age of 40 and then only intermittently. But if we take into consideration Alberti's multifarious activities, if we remember that between 1450 and 1472, while he was executing the above works, he was also writing dozens of pamphlets and books on the most diverse subjects — treatises on horses and ships, mythological fables and astronomical investigations, mathematical studies and love poetry — then, even while bearing in mind that he was an exceptional man, we must pause to wonder what precisely was the nature of his creative bent, what was hidden within this "ideal of the 15th century" so often compared to Leonardo but actually so much more eclectic and ambitious. It is no wonder that Alberti's reputation as an architect, beclouded by the reservations of his first biographers and by Vasari, should be contested in the middle of the 18th century by M. de la Lande, a century later most incisively by Pietro Selvatico, and in 1870 by Wilhelm Lübke, and finally should become the object of the severe invective of Julius von Schlosser in 1929. Swords cross on the issue of whether Alberti was or was not an artist: at one extreme we find the pacans of Algarotti and Temenza, Corrado Ricci and Adolfo Venturi, Michel and Willich — in general, of the classicists and Romanists; at the other extreme, the isolated but stinging disparagement of Selvatico and Schlosser; in between, we find many uncertain, tentative valuations, fearful of harming the Albertian myth, and also some excellent studies ranging from the documentary ones of Mancini to the culturally illuminating ones of Wittkower, neither of which is intended to define the artistic personality of Alberti. In order to penetrate the delicate nature and search out the creative originality of Alberti, it is necessary to eliminate all misunderstandings and preconceived notions that may have arisen during the contest for and against him, a contest which at times ceased to be a purely critical discussion and became tainted with nationalistic and even racial overtones. It is necessary to rise above the widely accepted legend of Alberti as "prince of Humanistic architects," incomparable genius, symbol and herald of the entire Renaissance; one must dispassionately recognize what he is not, what he was unwilling or unable to stand for, and what he cannot be made into, even by the incense of laudatory writings. With

this in mind, let us examine first Schlosser's scathing indictment, which shocked many as if were an act of *lese majesté* but has not been satisfactorily refuted.

Schlosser calls Alberti a "rhetorician who stands always in the forum"; a deceiver from earliest youth because of the comedy he wrote in Latin, which was accepted as authentically Roman; an esthete who moved in the rarefied atmosphere of intellectual speculation and had the pretension to lay down a grammar of the arts, elevating them to the rank of science by means of the rules of perspective and proportion; a man who, because of his pedagogical complacency, the imperial refinement of his poses, the deceptive grandeur of his works, belongs ideally more to the 16th century than to the early Renaissance. This is the corrosive psychological and moral portrait proposed by Schlosser. Then he analyzes the principal buildings by Alberti: (1) The Tempio Malatestiano in Rimini (PL. 51) is a "tricking up of the old Gothic skeleton." The façade does not reflect the interior but operates independently, as Alberti himself recognized. The flanks of the building, with their round arches resting on heavy piers, are drawn from ancient Roman aqueducts — "prose, not a work of architectural poetry." "Cold," "lifeless," "gray in nature and in theory," the Tempio betrays itself as a project turned over to workmen and only partially carried out by them in the absence of the architect. The Humanist's withdrawal from the low trade of "builder" makes it "paper," "words," "an erudite mask." (2) Even though the Greek-cross plan of S. Sebastiano in Mantua announces the High Renaissance, it is only a work of the intellect and not a work of art; its porch is "heavy and empty." (3) In spite of its organic plan, S. Andrea in Mantua (PL. 57) betrays "glacial aridity" and "pure rationalism." The reuse of the proportions of a Roman bath and the schema of a triumphal arch is "pedantry." Moreover, the tympanum of the façade is "characteristically obtuse and pedestrian." (4) The choir of SS. Annunziata (PL. 58) is "a direct copy from an antique model," the Minerva Medica; the bizarre idea of completing a Christian church with a Roman funerary chapel was criticized by his contemporaries and even by Vasari, who was always sensitive to the unusual in a composition. Moreover, anything of value in the choir is due to the original plan and foundations of Michelozzo. (5) The façade of S. Maria Novella (PL. 53) is again "the revamping of a Gothic building." The inlaid marble volutes, which anticipate baroque usage, were criticized by Burckhardt, himself an apologist for Alberti, because of their false relationship to the lower portion of the façade and because "the contrast between the incrustation and the grandiose forms" produced a particularly stunting effect. (6) The Rucellai Chapel in Florence, and especially the vestibule, is interesting; however, the medieval and "proto-Renaissance" Roman forms again show that this work is "a literary souvenir, not a form created with originality." The Shrine of the Holy Sepulcher (PL. 50) "mis-carries because of the almost grotesque effects, the dry imaginings of a pedant without spirit, because of its miserable marble incrustations, because of the ostentatious inscription which is out of proportion, the singularly lifeless crockets, and the even more capricious addition of a round edicule which almost gives the appearance of a *chinoiserie*." (7) The Palazzo Rucellai (PL. 55) is not by Alberti but by Rossellino; "his rather timid sobriety is not akin to the pompous preceptorial tone of Alberti."

Schlosser's disdainful criticism is at least partially invalidated by three prejudices which emerge on every page.

1. Alberti is unrelentingly compared to Brunelleschi; the Tempio Malatestiano to the Pazzi Chapel; its designed but unexecuted dome to that of the Cathedral of Florence; the choir of the SS. Annunziata to S. Maria degli Angeli (Florence); the erudite, literary, and "Roman" classicism of Alberti to Brunelleschi's classicizing ideas, still interwoven with the medieval Christian tradition. More often than not, in art-historical literature, the Brunelleschi-Alberti dilemma is handled as a match in which the two contestants compete for the domination of Renaissance culture. Some favor the first, the child of the people, the builder, the proponent of energetic, tense moldings and uncluttered emptiness, the "artist," "anti-Roman

par excellence"; others favor the second, the aristocrat, the Humanist who practices only through intermediaries, who invents and creates in masses, monumentally, evoking the grandeur of Rome. Actually it is a question of two figures who are so widely separated by their ideas, by their psychology, and by time that they cannot be compared. Alberti was 27 years younger than Brunelleschi, and leaving aside the doubtful work in Ferrara, his earliest commission, the sheathing of S. Francesco in Rimini, was projected three years after the death of Brunelleschi. In spite of their friendship, the two architects had different origins, formations, purposes, and temperaments. They even belonged to different generations, the one heroic and the other dedicated to laying down systems. These intervening years separate them far more than is readily apparent, for the artistic goals of the early Renaissance shifted rapidly. To judge Alberti by a critical thermometer graduated on a "Brunelleschian scale," as if he had lived in the same cultural atmosphere, reveals a misunderstanding of the work of both men.

That Alberti was not insensitive to medieval tradition is proved by numerous passages of the *De re aedificatoria* which refer to early Christian basilicas and to the Mausoleum of Theodoric in Ravenna; we also know that when in Florence he allowed no day to pass without going "to salute the temple of S. Miniato." His respect for the Gothic order is visibly demonstrated by his solution for the façade of S. Maria Novella — it is no accident that classicists like Bottari, Milizia, and Quatremère de Quincy believed that only the door could be his, because the rest was far too "German." His projected foliate decoration for the upper arch of the Tempio Malatestiano was Venetian in inspiration, as was the lily ornament that crowns the Shrine of the Holy Sepulcher. The fact that Alberti leaned frequently for his inspiration on late antique monuments — the arch at Orange for the façade of S. Sebastiano, the Minerva Medica for the choir of the SS. Annunziata — reveals a far from scholastic or classicistic attitude toward Roman antiquity, at least during the last decade of his activity. And the notion that he turned away from the intellectual world of Florence to bury himself in his investigations of the antique is nothing but a myth, visibly disproved by the Palazzo Rucellai, the Loggia facing it, and the Rucellai Chapel. His theories on the "visual pyramid," on the "penetration of light," on the "design that encloses the entire space of the site," on the "harmony of all the parts united by proportion," have all been legitimately interpreted as the neoplatonic development of the ideas of Masaccio and Brunelleschi.

2. Behind the attempt to take several works from Alberti to attribute them to Michelozzo or Rossellino and behind the Brunelleschi-Alberti conflict lies hidden the difference between the "particular" of the poets and the "universal" of the art theorists. Throughout the history of art, whenever an architect writes a treatise, he is accused of being doctrinaire and his buildings are judged as corollaries of his ideas. If the principles explained in the treatise apply, he is considered an intellectual and a pedant. If they do not apply, he is accused of inconsistency. This has occurred almost regularly from the 13th century to our own day, beginning with the notebooks of Villard d'Honnecourt and continuing all the way up to Le Corbusier's *Vers une architecture nouvelle*, whenever an issue is made of the discrepancies between the history of poetry and the history of language, between *ars liberalis* in the scientific-pedagogic sense and the individual creative impulse. Naturally this situation arises with Alberti both in the purist criticism of Selvatico and in the romantic criticism of Schlosser. The dichotomies arise in the study of Palladio, Vignola, and Guarini, though they are particularly striking in the case of Alberti because he was the first art theorist of the Renaissance and the first to search for laws of composition. The long and involved arguments over the precedence of theory over practice, which would lead to a rather mechanical presentation, or over the peculiar bias which practice gives to theory are as inevitable as they are inconclusive. It would be absurd to suggest a neat cleavage between the theorist and the artist or to disregard the value of the theory as a document to explain the intellectual attitude of a period or as the idea that underlies a poetic image.

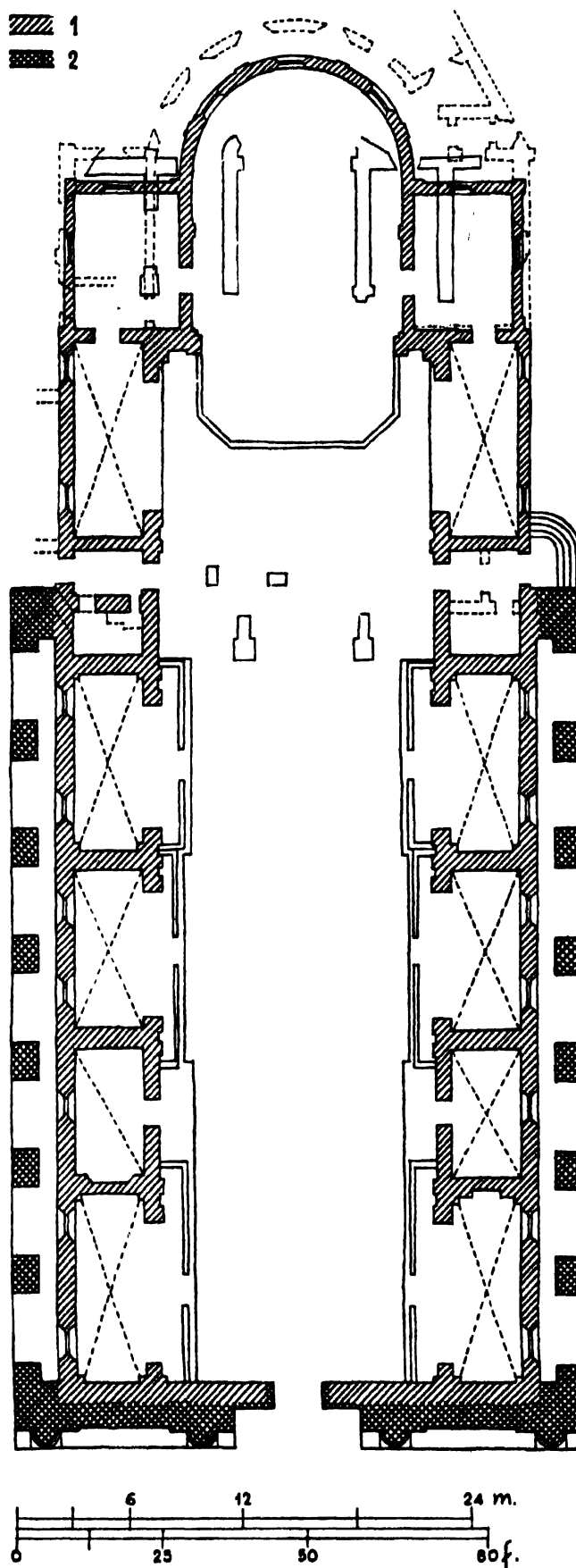
However, the history of architecture is built on concrete works of art and is not concerned with refutations of theory. This is particularly the case with Alberti, who wrote his treatises before he embarked upon the major part of his building activity. These treatises do not register any particular inspiration, although they comprise a vast and ordered critical experience that looks forward to principles which, if not contradictory, are at least so diverse that they cannot be summed up objectively as a simple "poetic statement." When Alberti states that it is permissible to complete entire buildings in the mind without regard to matter ("licebit integras formas praescribere animo et mente, seclusa omni materia," *De re aedificatoria*, I, 1), he is doubtless revealing his own particular point of view. However, having been completed only in the mind, these forms are not the concern of history. It should be made clear that freeing the architect from the shackles of his expressed theory does not in itself imply that he is an artist. However, if he is not an artist but an intellectual, a man of letters, a critic who builds, this must be confirmed by his works, and one cannot condemn him, as Schlosser to an extent has done, simply because of his activity as a theorist.

3. As a proof of his doctrinaire inclinations, Alberti is criticized for conceiving buildings that had no influence on his environment and his time but which prefigured the ideals of the following century. The massive appearance of the Tempio Malatestiano, the static cube of S. Sebastiano, the colossal order and the aisleless schema of S. Andrea, the monumental hemispherical dome of the choir of the Annunziata, the inflated volutes of S. Maria Novella, the stiff, bony structure of the Rucellai Palace façade were almost completely disregarded, it is said, by the 15th century, which remained faithful to the letter to Brunelleschi's example and to Michelozzo's vocabulary as revealed in the Medici-Riccardi Palace. Alberti's ideas were taken up, however, in the mannerism of the 16th century and the baroque. Such remarks cannot constitute an accusation but only a statement of fact. It is in the 16th century that Alberti's influence asserted itself because his treatise on architecture, published in 1485, coincided with the intense interest of the time in theoretical and archaeological studies. That Alberti the architect should have remained, in a way, isolated within his century is not an exceptional occurrence: St. Sophia stood in Constantinople as a unique monument, for the art of Anthemios and Isidoros was neither understood nor continued. Borromini had no immediate followers, but he exerted such an influence on the following century that some scholars have attempted to establish a cause-and-effect relationship between his style and the rococo. In modern times, Adolf Loos occupies a situation analogous to that of Alberti: he was formed in the United States by his study of Richardson and Sullivan, as Alberti was in Rome by his study of the antique; when he returned to his native Austria, he was not accepted nor understood for at least half a century.

Of the criticisms advanced by Schlosser and other detractors of Alberti's artistic worth, only one is incontestable: that he did not personally oversee the execution of his buildings. He deluded himself in his belief that it was possible to supervise a project from a distance, to create without working on the edifice, to insist upon the importance of the "conception" or the "significance" of a work rather than the work itself. Was this a theoretical precept or just an attitude produced by the conditions of his professional practice? There can be no doubt, for in the preface to the *De re aedificatoria* he declares, "I define an architect as one who [is able] to state definitions with a sure and admirable method and manner and with imagination and spirit; further, in his work he shall have learned to deduce (*absolvere*) from the movement of weights and the conjunction and union of bodies whatever may most beautifully be adapted to the worthiest uses of man." The Latin *absolvere*, no matter how it is interpreted, cannot, when it is related to the technical creation of the building, have the same meaning as "completing entire buildings in the mind," in the passage quoted earlier from *De re aedificatoria* (I, 1), nor can it imply the simple "editing" of a project to be executed. It is true that the Aristotelian distinction between form and matter causes him to un-

derstand the building as "... a certain body... which consists of form, as do other bodies, and matter, of which the first quality is the product of intellect and the second is assumed from nature: for the first, one must employ imagination and thought; for the second, preparation and selectivity" (*De re aedificatoria*, Preface). It is evident, however, that the architect must also know how to choose and prepare everything concerning the materials; otherwise it is necessary to explain why so much of the treatise is devoted to technical questions and methods of construction. In a famous sentence, continually cited by his critics, Alberti advises the wise man to draw up the design but to refrain from directing the work lest he be blamed for the defects of the builders. "Therefore, the reputation of the adviser should be guarded; it is enough to have offered trustworthy advice and refined drawings to the asker. If, by chance, you take it upon yourself to oversee and complete the work, you can scarcely avoid a situation where all the faults and errors of others, whether committed by inexperience or neglect, will be blamed on you alone" (*De re aedificatoria*, IX, 11). It seems unjust to interpret this as anything but practical professional advice and to invest it with the weight of a considered theory that would postulate for architecture, but not for the other arts, a creative process in which design and execution are widely separate acts. Since his employment as papal abbreviator made his presence on actual projects impossible, it is not surprising that Alberti attempted to justify his position rationally. At the same time his professional precept may also reflect his bitter appraisal of Brunelleschi's experience. Even though he distinguished between himself and the master masons, Brunelleschi had exhausted himself by his assiduous supervision; he was convinced that only strict control over the execution produces architecture, and he stubbornly refused to entrust others with the work or even to let them know his plans. Despite this, the greater part of his work was left incomplete and was finished by his followers without true understanding (see BRUNELLESCHI). Alberti in reaction recommends the opposite procedure: to prepare perfect drawings and models and commit the execution to diligent and accurate overseers (*De re aedificatoria*, IX, 11). Whether or not this often quoted sentence actually reflects Alberti's mode of life, it is certain that he prepared precise drawings even for such details as the capitals of the Tempio Malatestiano and the splendid ornamental roundels of the Shrine of the Holy Sepulcher in the Rucellai Chapel, but he did not direct the work. This one fact alone would be enough to disqualify him as a genuinely creative architect (for the relation between project and architecture, see ARCHITECTURE), for it is impossible to excel in any art without practicing it to the full in all its parts, without possessing the skill to the fullest.

Alberti did have experience in building, as he himself affirms in *De re aedificatoria*. This is a fact that is too often overlooked in the reconstruction of his artistic personality. He is studied only as a theorist and as an artist in an attempt to establish a cause-and-effect relationship between his two passions. Insufficient emphasis is placed on his role of mediator between the theorist and the creator, though it would be most illuminating and would best serve to explain his unusual character both as intellectual and as ideator. Throughout the pontificate of Nicholas V, while he was attending to his own original work from Rome, Alberti occupied a post that we would call "inspector of monuments" or "restorer" today. This work required ingenuity, a critical sense, and technical experience. Unlike the historian, the restorer must be eclectic, for he is professionally involved and his activity, unlike that of the creative architect, presupposes scientific research; great restorers are rarely great artists. Alberti is an exception to the rule because his devotion to the remains of antiquity, like that of the entire Renaissance, is not rigid. He did not protest when Sigismondo Malatesta stripped S. Apollinare in Classe to obtain marble for the revetment of the Tempio Malatestiano, nor did he hesitate to transform radically the structural and spatial organization of the crumbling S. Stefano Rotondo; in fact, his work there is particularly significant and revealing. He restored the ancient circular colonnade in the interior, demolished the continuous exterior wall, and created a new perimeter by wall-

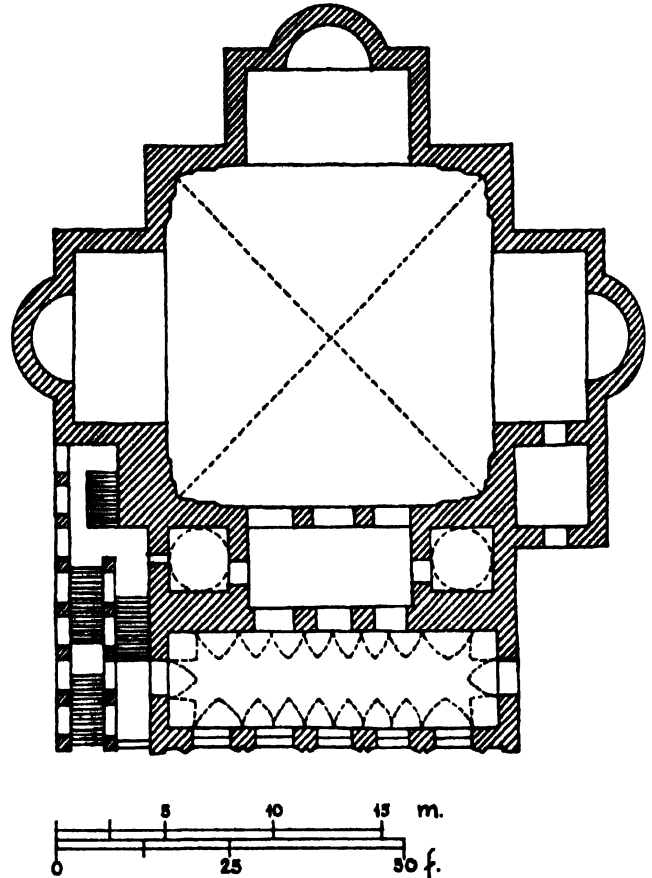


Rimini, Tempio Malatestiano, plan. Key: (1) Walls of the preexisting church of S. Francesco; (2) walls constructed by Alberti.

ing up the outer colonnade. By these operations he revolutionized the Early Christian arrangement of the building. He made archaeological fidelity subservient to contemporary concepts and taste, knowledge of the past to creative impulse. As Alberti attended to this restoration while writing his treatise on architecture, certain of its passages take on the value of a "poetic document." The consolidation of the interior colonnade with its straight architrave and the walling up of the exterior colonnade, where columns supported arches, correspond exactly with the passage in *De re aedificatoria* where he remarks that the transition from arch to column is incongruous and that architraves should rest on columns, while arches should rest on *columnae quadrangulae*, that is, on piers. By walling up the external colonnade he modified a structure that was unacceptable in his eyes and made it consistent with the principles of the antique or for that matter with S. Miniato in Florence. Moreover, by abolishing the exterior ambulatory he rearranged the Early Christian composition to fulfill the ideals of perspective vision. The empty ring surrounded by a continuous wall had no spatial significance, and its dimensions were indefinable and subject to disrupting half-shadows; in a word, it was antithetical to the rigorous geometric construction of space by which every natural accident was absorbed and annulled by proportion, circumscribed, and interwoven with that finite harmony that does not admit of addition or subtraction of any part without clear damage to the whole. By suppressing the exterior ambulatory and by enclosing the structure with a wall made rhythmic by an order of columns, he established a tight consonance of the elements, as if a radiating series of visual pyramids penetrated the skeleton of the diminishing columns. Thus he imposed on what he was willing to preserve a rational and spatial discipline expressed in elements ascertainable "through comparison," in weights and intervals logically measured, and in harmony. With Humanistic certainty he composed and ordered the transmissions from the past, despite the preexisting grammar of forms, into a truly Albertian design which "enclosed the entire space of the site" (*De re aedificatoria*, I, 7). Is it the theorist or the artist acting at S. Stefano Rotondo? Obviously it is not the scholar who is obsequious before the ancient structure and most careful not to alter it. Nor is it the pure architect who would not renounce the opportunity to insert his own details, even though it upset the spatial organization. It is a third person, the architect-critic, the nonartist from the point of view of an individualized artistic style. He is, however, a professional who is sure of his own choice and who demonstrates in the act of building that he is capable of handling space originally.

The activity of Alberti as curator and restorer makes it easier to understand how Alberti, despite his aristocratic complacency in separating the architect from the builder, had direct experience with building, that delicate process which transforms a drawing into a construction and in turn leads into later projects. This, then, bridges his vocations as theorist and as artist and gives a particular nuance to each of them. The 10 books of the *De re aedificatoria* are full of quotations from Greek and Latin writers, ranging from Homer to Firmicus Maternus, from Pliny to Vegetius; yet beneath this display of erudition and this desire to be called "the Florentine Vitruvius" we sense the vitality of the architect-critic who disowns the collector of authoritative texts. "Now I shall relate whatever . . . I have collected with the greatest care and diligence from the works of the ancients; I confess that I have learned more by far from the works themselves than from the writers" (*De re aedificatoria*, III, 16). He is concerned, above all, to adapt the traditional building forms to the practical and worldly life of the Quattrocento, as he analyzes hospitals, prisons, theaters, and gardens. But throughout he is more interested in the organization of space than in the literal transposition of the orders or of the other elements of the architecture of antiquity. Significantly he insists, "I speak not as a mathematician but as an artist" (*De re aedificatoria*, VI, 7). His daily visits to ancient ruins were certainly not a pretext to establish or to corroborate a new idiom, as was the case with other contemporary architects who had more artistic temperaments.

It is exactly this historical and precise knowledge of the monuments that kept him from creating an ideology, from believing in the possibility of creating a universal law for architectural beauty. If he studies the "species and varieties" of the past, it is not "that by transferring their plans into our work we may cling to them as though bound by laws, but so that, instructed by them, and adding new discoveries, we may strive, if possible, to gain a measure of praise equal to theirs, or even greater" (*De re aedificatoria*, I, 9). How removed this attitude is from the somewhat hypocritical lip service that we sense in



Mantua, S. Sebastiano, plan.

the writing of the more dogmatic theorists, especially in the light of Alberti's later statement: "And I shall approve if, in the new inventions of works, the most accepted methods of the ancients are present and if in these works the new discoveries of the intellect are not lacking" (*De re aedificatoria*, IX, 10). This reveals the subtle critical nature of Alberti's inspiration. This principle is the motivation of the curator and the restorer in his daily practice and the result of a truly felt experience, and it serves to define, if not actually to compartmentalize, the mysterious figure of Alberti the architect. This "problem of the Renaissance" does not fully enter into a "history of creativity," but is definitely outside the orbit of the "history of expression." It is the problem of the architect-critic, a description that could not be applied to Filarete, Francesco di Giorgio, or Palladio, to Serlio, Vignola, or Guarini, to Theo van Doesburg, Gropius, or Le Corbusier, or perhaps to any other theorist or formulator of "poetics," because in these men either the artist outweighs the theorist or the theorist the artist, or — a third possibility — the two activities remain substantially distinct and disconnected. So the term "critic-architect" does not apply to a category but serves to characterize the artistic personality of Alberti.

The statement of Alberti's critical thought as it can be read from his buildings has been clearly summarized by Wittkower. "In the relatively short period of twenty years Alberti passed

through the whole range of classical revivals possible during the Renaissance. He developed from an emotional to an archaeological outlook. Next he subordinated classical authority to the logic of the wall structure. And finally he repudiated archaeology and objectivity and used classical architecture as a storehouse which supplied him with the motives for a free and subjective planning of wall architecture" (*Architectural Principles in the Age of Humanism*, 2d ed., London, 1952, p. 49). The sequence of these critical passages can be usefully altered by taking into account the work in Ferrara, the Rucellai Palace, the Rucellai Chapel, and the choir of SS. Annunziata and by reversing "emotional" and "archaeological." This formula will clarify a process that gradually overcame the positions expressed in *De re aedificatoria* and became more and more subjective.

There are no truly archaeological connotations derived from a precise antique model, except in the Arco del Cavallo at Ferrara, which was first attributed to Alberti by Adolfo Venturi. The campanile of the cathedral at Ferrara, despite the somewhat unresolved handling of the double arches compressed by the corner piers, reveals Alberti's preference for an elementary geometry of related volumes, which in this tower takes the form of four superimposed cubes.

In the Tempio Malatestiano at Rimini (PLS. 51, 52, FIG. 194) archaeological references are no longer consistent. To compare the Arch of Augustus at Rimini or the Arch of Constantine in Rome to the façade does not take into account the fact that the building was designed as a two-story structure. Nor does it explain Alberti's strong sense of the wall as a compact structure which leads him to engage the columns by cutting them through their diameter instead of through one-third of their thickness according to the classic rule. To compare the arched treatment of the side walls to Roman aqueducts is even more imprecise if one considers the high stylobate of latrion stone that terminates and frames the seven great arches and, by isolating the structure from the landscape, enhances the effect of a "universal harmony of the parts." The Tempio is perfect and self-sufficient; it dominates the city.

Let us not forget that in this work Alberti had been confronted with the task of transforming the Gothic church of S. Francesco. His experience as a restorer stood him in good stead. He considered it futile to alter the interior and left Matteo de' Pasti to rearrange it until he could bring it to a worthy Renaissance climax by opening out the space under the large hemispherical dome. The medal struck by Matteo de' Pasti in 1450 (PL. 52) presents a weak and perhaps inexact representation of the dome he had in mind: it appears to be raised on a high drum, but in truth it was intended to be set into its supporting block like the dome of the Pantheon. Alberti had intransigent theories about the shape of domes. When Antonio Manetti criticized the design of the dome because it was not twice as tall as its width, he had in mind Brunelleschi's monumental though Gothically slim dome for the Cathedral of Florence. To his objections Alberti replied: "I trust the builders of baths, of the Pantheon, and of all these great things more than I do him [i.e., Manetti], and I trust reason more than I do him. If he is set in his ways, I shall not be surprised if he frequently errs." His conception of space in this case seeks its confirmation in the Pantheon and the dome of the Baths of Diocletian. Even though Brunelleschi had to resolve the Gothic character of the Cathedral of Florence in a modified verticality, the problem at S. Francesco was entirely different. Here the dome served to give new proportions to the space by making the wide nave open out into a sort of ideal rotunda similar to the one he was to plan for the Annunziata in Florence. Alberti's attitude concerning the interior of S. Francesco is not unlike his approach to the restoration of S. Stefano Rotondo, the theory of which he expressed in a letter to Matteo de' Pasti: "We have to help what has already been done, not spoil what has to be done." What he means is that it is pointless to attend to details; it is possible to "help out" what exists by covering the nave and chapels with curved and swelling roofs which will lead up to the great dome. The method confirms the principle followed by the restorer; it is "corrective" in nature

but in the grand manner, unlike the thin, tentative solutions of Matteo de' Pasti. Thanks to a new conception of scale, the existing church could be transformed into something different and timely without altering a single old wall. The barrel vault made of wood was to cover the nave and lead up to a domed circular space prefiguring the project designed 30 years later for S. Andrea in Mantua.

His position in regard to the exterior of S. Francesco is the same. The comparison with Palladio's work on the Basilica of Vicenza hardly seems appropriate. Palladio did not "correct" but recast the old into the new. Alberti only enclosed the old box in a modern case. Contrary to appearances, he behaves almost like a "scientific" restorer. He refuses to continue or to alter the older building; in fact, along the flanks he isolates it from the new structure by more than 18 inches. The lack of correspondence between the windows of the Gothic church and the new marble facing is for him a mark of probity and respect. The flanks of the new building confirm Alberti's remark: "The whole rationale of architecture turns on this point... a solid, entire, and unified wall" (*De re aedificatoria*, III, 1). The wall is whole; and the great arcades give it depth and a third dimension. Puritanical in his horror of decorative or coloristic sensuousness, he recommends that in temples "there should be nothing that does not savor of philosophy" (*De re aedificatoria*, VII, 10). This is why the piers are smooth, the lower part of the plinth quite plain, its cornice and corners clear and sharp.

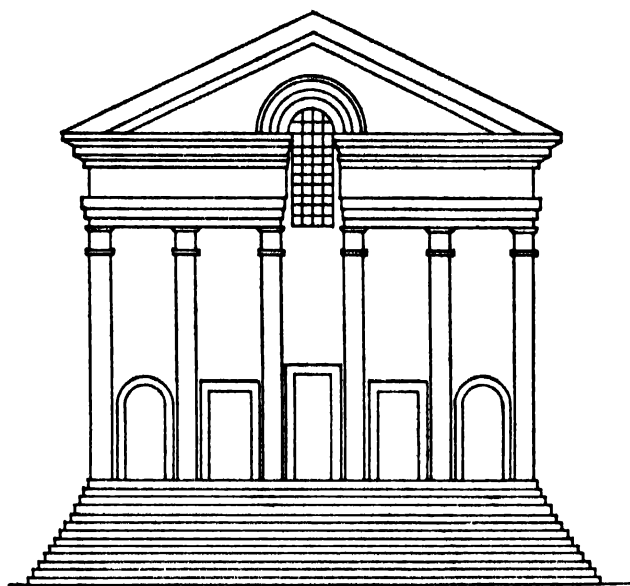
The problem of Alberti's design for the façade of the Tempio Malatestiano is controversial. Neither Matteo's medal, Alberti's letters, nor any reconstruction succeeds in giving a precise idea of it. What should have been the first façade of the Renaissance, leaving aside the Pazzi Chapel, which is also unfinished, is in fact undecipherable. It is built against the old building, and unlike the flanks, there is no distinction between container and contained. The façade adheres to the volume; it attempts to absorb and subdue it, and perhaps because of this ambition it was never completed. Matteo de' Pasti's medal shows the central portal flanked by two deep openings resting on a stylobate like the arches on the sides. But their depth, cut into the thickness of the wall, was not only insufficient to contain sarcophagi but endangered the solidity of the structure to such a degree that Alberti was forced to reduce them to niches. His intention of turning the corner and continuing the row of arcades on the flanks was frustrated. Nowadays the depth of the niches is walled up. As a result the entire perspective and three-dimensional conception of the façade have been destroyed. The central arch, whose greater height was emphasized by the vertical spring of the decorative rinceau, was intended to stand visually in front of the lateral openings. This effect of depth was heightened by accentuating the frame of the door and setting it back within the depth of the arch. The wall treatment was enriched by four engaged columns above which the entablature and cornice were broken out. The two central columns were continued in the pilasters of the upper zone, which were meant to enclose a window with three openings crowned by an arch with foliate motifs. On either side a curved half lunette marked the height of the new vaulted covering of the interior. This entire concept is too complicated to be satisfying. Here lively imagination attempts to overcome the "architecture of criticism" and fails. Alberti was unable to be a pure artist freed from a critical context, from a rationality working in contact with a text to be corrected or argued. Within the limits of an esthetic committed to the concept of the wall he began to create a splendid perspectival façade based first on the central arch, second on the lateral openings echoing the flanks, and third on the rather low door. However, when he had to crown this with a second order, he became embroiled in an attempt to give three-dimensionality to the cross section of the roof. He did not know how to proportion the window and the arch or how to conclude without recourse to a Venetian decorative flourish.

At S. Maria Novella in Florence (PL. 53), Alberti seems to criticize his own failings at Rimini. Here, too, he accepts everything that had been built before him, including the round

window, which he had violently rejected at Rimini — against the advice of Matteo de' Pasti — in favor of his "triforium." Moreover, he accepts the basic terms of the medieval organization and does not attempt to impose a three-dimensional perspectival effect on it. In the splendid motif of the entrance, he unites the arcade and the portal and eliminates any picturesque effects. He does not, however, refrain from imprinting a thoroughgoing "modernity" on the structure as a whole. The operation unfolds almost like a theorem. The rectangle of the lower zone is defined, above all, by the two end pilasters. Then it is subdivided by four columns which have the function of circumscribing and isolating the medieval section and of enhancing the dimensions and depth of the central arch. In order to avoid the difficulties encountered at Rimini in connecting the upper and lower zones, he separates them with a high fascia and an incrustation consisting of a series of small squares. The fascia is framed by the cornice and by the continuation of the lateral pilasters. It is brought into direct contact with the preexisting round window, depriving it of the preponderant role it would have played in the medieval scheme and integrating it into the new structure. The whole upper level seems to rest on two compositional intentions: to assimilate the round window (which had been restricted by the tangential wall areas and deemphasized by the decorative frame that forms, above and at either side of the pilasters, a continuous unit crowned by the fine triangular pediment), and to combine the aedicula and the central fascia effectively, thus relating the upper to the lower zone of the façade. The delicate play between the columns and the central wall areas is not adequate to achieve this end. The flat volutes with their heavy profiles — their flatness distinguishes them from the baroque — repeat the form of the round window with their circular decoration. Thus they counteract the upward thrust and pull it down as no other element could do with equal efficacy. They may be said to constitute a "corrective" expedient, a critical resource, but they solve in an original way the unsolved problem posed at Rimini of how to fill the upper lateral "voids." Here the volute profiles form the diagonals of imaginary squares that give definite form to the voids. Finally, the whole composition is resolved by the basic module of the square. The central fascia unites with the lower order to form two squares; the aedicula is inscribed in a square; there are two squares in the space running between the pairs of pilasters; there are six squares in the portal. As in any compositional analysis, a somewhat mechanical impression is conveyed by this discussion. It can, in fact, be noted to a certain extent in the finished work, particularly in its desire to conquer by any means, even if eclectic, the problems of Rimini. Despite its rational and logical foundation, the façade of S. Maria Novella is one of the most brilliant "critical discourses" of Alberti the architect.

It is rather difficult to understand how Alberti can be denied the Palazzo Rucellai (PLS. 54, 55), also in Florence, particularly when Bernardo Rossellino, to whom it has been attributed, shows clearly in the Piccolomini Palace in Pienza that he never understood Alberti's syntax. It is true that the spatial organization of the building lacks sufficient rigor. Filarete's statement that it had been done "anew" could perhaps be interpreted to mean that Alberti accepted an earlier internal distribution without troubling himself much with the court, which has the traditional treatment of arches on columns, a motif which is opposed to his principles. The façade, however, is probably Alberti's most original invention. A web of lightly projecting pilasters combines concepts of antique derivation with those of Brunelleschi and Michelozzo. It gives a vertical rhythm to the façade and orders its vertical development by means of the superimposed orders. Alberti's *ratio* is expressed by the compartments between similar members. It creates a module which, whether it is understood as the emergence on the surface of the imagined structure of the interior or as a cross section of the visual pyramid, constitutes a formal statement of considerable import. It is perhaps Alberti's most brilliant and incisive critical attainment. This conceptual idea, however, is not the sole value of this work. One need only

compare the façades of the Palazzo Rucellai in Florence and the Palazzo Piccolomini in Pienza to discover how the copy disregards all the artistic statements of the original. The module is quite different. It is approximately two squares in the Palazzo Rucellai, while it is widened and indefinite at Pienza. In Florence the vousoirs of the arches that frame the windows span the distance between window and pilaster; in the Piccolomini Palace the segmentation of the stone between pilaster and window is inept and weak. The stylobate is necessarily interrupted for the doors in Florence, but immediately above them are placed square windows which reestablish the unity of the wall by their horizontal rhythms. In Pienza, however, the whole motif is garbled. In Alberti's work the passage from the colonnette of the window to the upper arches is broken by a clearly defined architrave, while Rossellino's copy repeats the expedient in such a trite and decorative manner that it



Mantua, S. Sebastiano, schematic drawing of the façade.

unites the lunette to the lower part of the window as one complete opening. Two more characteristics distinguish these two buildings. The extrados of the window arches of the upper story in Pienza touch the crowning cornices. In Florence, however, they are much lower and "support" a section of solid wall. Furthermore, the pilasters, which barely break the surface in the Palazzo Rucellai, are clearly separated from the wall in Pienza. Because of these two misunderstandings, Rossellino's building is characterized by the banal motif of superimposed orders formed by the pilasters and trabeation and by wall panels inset with the windows. The horizontal and vertical articulation of the superimposed orders in Alberti's building is true to the web of the wall. At Rimini a transition between the voids of the arcades and the mural solids of the upper section is provided by the medallions placed in the spandrels at a height adequate to overcome the static nature of the wall without disrupting its consistency; at S. Maria Novella the banded pilasters and the columns of the ground floor project to organize the heterogeneous elements of the façade, while in the aedicula they project just enough to balance the dominance of the central oculus; in the Palazzo Rucellai the texture of the rustication allows the pilasters to emerge almost without recourse to actual projection, as if they were minor interruptions of the compact design. "Circumscription is nothing but the drawing of an outline, which when done with too apparent a line does not indicate a margin of the plane but a neat cleavage," says one passage of *Della pittura* (*On Painting*, trans. Spencer, p. 68). Rossellino had certainly not considered this statement. "Light and shade make things appear in relief" (*On Painting*, trans. Spencer, p. 82). There is another passage that almost

seems his own characterization of the Rucellai Palace, even though it refers to painting. "It is a thin veil, finely woven, dyed whatever color pleases you and with larger threads in the parallels as you prefer. This veil I place between the eye and the thing seen, so [that] the visual pyramid penetrates through the thinness of the veil" (*On Painting*, trans. Spencer, pp. 68-9).

How is it possible to refuse Alberti the Rucellai Palace? Does it seem too Florentine and insufficiently "Roman," majestic, and plastic and too far from the rich cadences of the Tempio Malatestiano? This circumstance especially underlines another of Alberti's qualities — a versatility with forms attuned to the character of the patron. To the Humanist Pope Nicholas V he dedicated a treatise; to Sigismondo, the condottiere of unrestrained ambition, a triumphal arch; to Giovanni Rucellai, a worldly merchant, a noble house "tastefully adorned, more pleasant than proud" (*De re aedificatoria*, V, 3). The Rucellai Palace is such a masterpiece that one would be tempted to see Alberti as a true artist, not just an architect-critic, but for one remaining doubt. It is not a question of the heavy cornice, which functions uncertainly as a crown both to the top story and to the palace as a whole, but of the length of the building. How many times should the module be repeated? Five times, as in the original project it is said to have been, with only one door? Or eight times, as the most credible hypothesis would have it, with a "solid" wall area in the center reminiscent of Brunelleschi? Or even more times? With what proportions and in what manner consonant with the module could Alberti have brought the sequence to its conclusion? It is an important question, particularly since the treatment of the corner is not characteristic of a terminal motif. Since a sure answer cannot be given, we must be content to judge this building outside the limits of Alberti's definition of "finitio" — that virtue by which nothing can be added or subtracted and which Alberti himself considered a fundamental corollary of the creative act.

The Florentine flavor of the Palazzo Rucellai, which has surprised more than one of Alberti's biographers, cannot be explained solely by these considerations or by the Alberti-Brunelleschi dilemma proposed by Schlosser. He demonstrates a feeling for the milieu — a necessary quality in a good restorer — which is met with even in some of the minor works attributed to him. This is true of the apse of S. Martino at Gargalandi near Signa — Alberti enjoyed a benefice from this church for years — where the fluted pilasters, derived from those of S. Maria Novella, support an architrave and then an arch which is incapable of circumscribing the volume of the Romanizing niche. It is even true of the little Loggia Rucellai which rises opposite the Palazzo and is traditional in form almost to the point of anonymity. Later generations, in closing its openings, have added a "correction" Alberti probably would have approved.

The same applies to the Rucellai Chapel in Florence. Here the spatial scansion of the pilasters, of the architrave with its strigilated frieze, and of the semicircular arches dividing the barrel vault into sections is purely Florentine in tone. The sole personal accent is provided by high-placed windows, which seem to hang from the trabeation by a ribbon of fronds; these are related proportionally to the wall squares in a characteristically Albertian manner. However, some things permitted an artist are not allowed in an architect-critic. Although usual and basic in the 15th-century Florentine lexicon of forms, the half pilasters used at the corners seem out of place under the majestic architrave and even more so in the space of the altar. The Shrine of the Holy Sepulcher (PL. 50) in the chapel is a "theoretical" composition; rigorously doctrinaire, it need not detain us long here. The artist's hand appears in the triple order of squares interrupted by pilasters on the front and sides and even more in the unfluted pilasters of the apse without their bases and capitals. They seem a clearly "metaphysical" version of those on the Palazzo Rucellai. The fanciful "battlement," a clearly Venetian reminiscence, seems scarcely in harmony with the classic dado it crowns. It is certainly an exotic motif but chosen for very rational reasons. The space in the chapel would not actually allow the encumbering presence of the Holy Sepulcher, which exists only for itself and

sits there without a movement under its crushingly heavy cornice, if Alberti had not devised a way, controversial though it may be, to establish a relation between the shrine and the ceiling of the chapel. As an experienced critic searching through the lexicon of architectural forms for an element capable of mediating the passage from the shrine to the ceiling, Alberti was impelled to choose the characteristic motif of Venetian palaces of the Middle Ages and the Renaissance (see SANMICHELI). Although the expedient is rather "intellectual," through it the Holy Sepulcher is at home in the space of the chapel. It seems less brusque if the pinnacles are interpreted not as the conclusion of the shrine, from which they are detached intelligently by numerous openings, but as a free design suspended in space and hence without weight or support. They form an airy mediation between two constructions, one mural, the other volumetric.

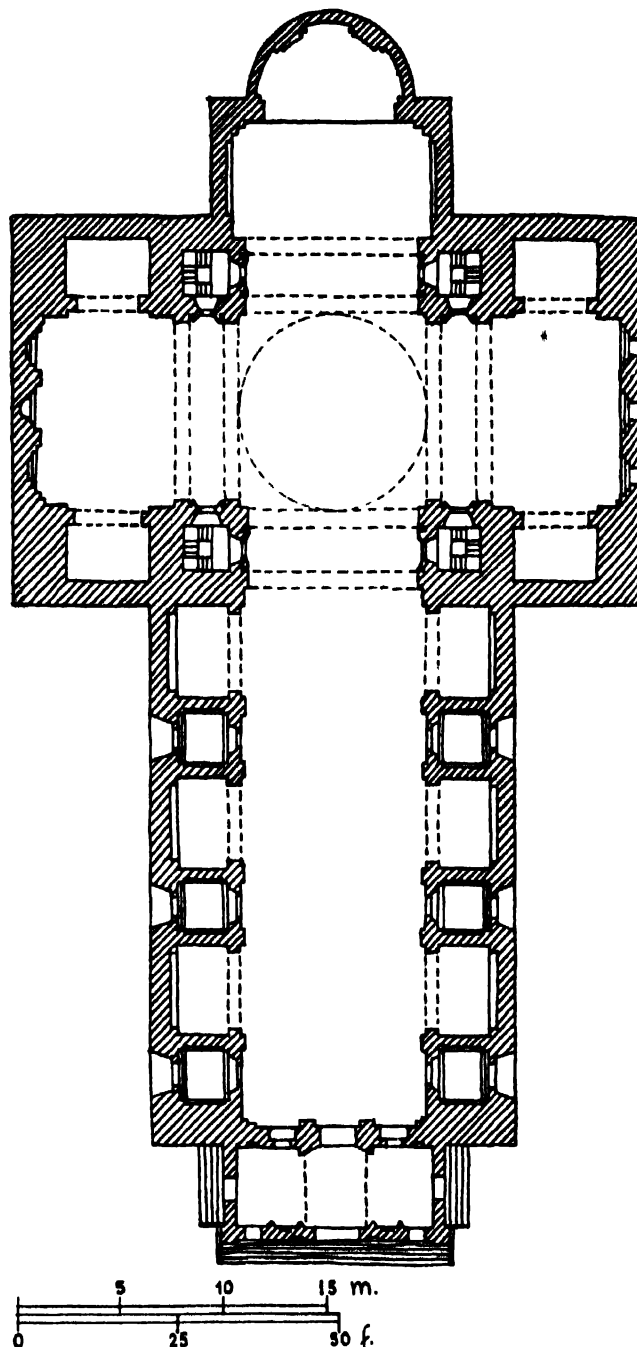
Because of the modifications made in the façade of S. Sebastiano (PL. 56, FIGS. 202, 206) in Mantua following Alberti's second project, it is advisable to analyze this work after discussing the Church of S. Andrea (PLS. 57, 58, FIG. 204). In fact, S. Sebastiano reflects the final crisis in Alberti's vocabulary of forms, while S. Andrea represents the apex of a composition carried out according to the principles of "proportion," the "visual pyramid," and the "penetration of light." The organization of the space in S. Andrea is unusually rigorous and is based on the module of a square about 60 ft. on a side. Three modules form the nave, one the crossing of the four arms, one the volume of the apse, and one each arm of the transept. The height of the cornice is also one modular unit. One-half module determines the width of the major chapels, and one-third module their depth, the remaining space defining the width of the minor chapels. Hence there are three cubes under the immense coffered vault or five cubes along the length of the entire church. Along the sides there is an alternation of grandiose arches that reach up to the cornice and are bounded by pilasters that circumscribe the exterior walls of the minor chapels. Alberti did not like the basilican scheme, which he judged less suitable for a sacred structure than the central plan because of its secular origins. He did not like the staccato repetition of elements, the effects of illusionistic dissolution, nor the lack of consistency in the juxtaposition of its three-dimensional "quantities." The basilican form is accepted here, however, but challenged in each of these traditional characteristics. The cubic blocks of the minor chapels break up the longitudinal succession of voids. They effectively destroy the independent existence of the aisles and divide up the nave wall in terms of perspectival groupings. This is enough to absorb any indefiniteness implicit in the longitudinal system and to give it a proportional "definiteness." In order to secure the unity of the nave with the volumes of the transept and apse, Alberti devised a continuous trabeation that binds the entire space together. Here again, as in the Tempio Malatestiano, the image is incomplete without the dome. The one built later by Filippo Juvara is slender and lighted, while Alberti had planned it to be hemispherical and blind so that no light deriving from it would interrupt or dissolve the carefully organized rhythm of solids and voids. The profuse decoration from the end of the 18th century, which is so antithetical to the principles of abstention from decoration and chromatism which Alberti prescribed for churches, makes it even more difficult to understand the visual impact of the original work. The planning of the three façades, at the entrance and the arms of the transept, takes its start from a critical evaluation of the mistakes at Rimini. As well as adhering to the volumes of the church, the façades break away and form vast atria. Their composition picks up again the module of the interior — a central arch backed by a barrel vault and flanked by two solid areas framed by pilasters raised on high pedestals. The architectural style, however, is weaker. The pilasters do not effectively contain the arch, which rests on a smaller order that is almost independent of the larger. The solids between the pilasters are not so unified as in the interior and become weakened in the areas over the lateral doors, the niches, the trabeation (which fails to link the central section

securely to the flanks), and finally the round-topped windows that neither reach the major architrave nor are low enough to set in order the unity of the wall. In the theoretical organization the problem of the façade is resolved by means of a planar projection of the internal disposition. Here again, however, the problem of the exterior representation of the barrel vault above is posed just as it was at Rimini. Alberti quickly pushes aside any idea of repeating the central gallery and decides to place a triangular pediment over the whole of the lower order. This, however, creates a difficulty; if the window that lights the nave must rest above the pediment, the latter will be too low, as it actually is. If the frontispiece covers all the cross section of the vault and the window is inserted in it, it will be too high. The artist and the critic become lost between the two alternatives. The expedient of separating the façade from the concatenation of the whole organism is well intentioned and in this case legitimate, yet it is this one characteristic that makes the whole façade seem inconclusive.

The interior of S. Sebastiano, recently restored, mirrors the crystalline and purist ideal of the centralized temple dreamed of by Alberti (PL. 56). It is a cube at the center of a Greek-cross unit, stretching out in three arms toward semicircular apses and in the fourth toward the openings of the entrance. The stereometric and demonstrable purity of the spatial organization is in direct contrast to the execution of the architraves, capitals, brackets, and portals of the atrium with their massiveness and archaeological flavor. Here Alberti's distinction between "beauty" and "ornament" is most useful in understanding how the spurious decorative elements can be absorbed by the force of the composition: "Beauty is a unity with a fixed plan of all the parts in that of which they are part; so that to add, diminish, or change is possible in no respect without rendering the whole less beautiful" (*De re aedificatoria*, VI, 2). This is the peremptory demand of true architecture. Ornament, however, is applied and nonessential. "Ornament will be, in some sense, a subsidiary thing, a certain reflection of beauty and, as it were, a complement to the work" (loc. cit.). Finally, even the ugly and the grotesque can serve beauty if they break the monotony of the theoretical schema and serve to bind the geometry to the material. An awareness of the subsidiary and integrating character of decorative details, even though in opposing taste, is implicit in the Albertian theory. Thus it would be absurd to criticize him for trusting unskilled workmen with those details which he did not believe fundamental. This is relevant both to the church as a whole and to the atrium.

The problem of the façade is somewhat different, for a change that reduced the number of pilasters followed the original project of 1460 by 10 years. What was the original project like? Among the many conjectures Wittkower's seems the most convincing. Atop a high stair, which repeats Alberti's typical isolation of the church from its surroundings, six slightly projecting pilasters form with their high trabeation a square topped by a generous triangular frontispiece. Into this theoretically exact relation of the members a critical thought intrudes — the necessity, already indicated in early works, of expressing the integrity of the wall. To achieve this end, the door openings are made to cut irregularly into the plane. Their form and height vary; three are rectangular and two arched. An even more courageous expedient occurs in the triangle of the frontispiece. It is placed in contact with the lower square, the architrave is broken, and an arch is inserted. In 1470 while he was working out the façade of S. Andrea, which resolved with its deep voids the problem posed at Rimini, Alberti began to rethink this project and eliminated the second and fifth pilasters in order to accentuate the compactness of the wall. It is a final critical act of considerable significance, even though it does not succeed in redeeming artistically a work which is too beset with thorny problems to be judged on the concrete level of artistic creation. By eliminating these two pilasters he places in doubt his own formal vocabulary as seen at the Palazzo Rucellai and S. Andrea. In effect he is rethinking his entire compositional technique, from the point of view of eurhythmic proportions that are immediately understandable in their visual play on the wall, as he

had stated in it the *De re aedificatoria*. It means that he wished to concentrate on other effects — effects that are more picturesque and more remote in antiquity, less logical and serene but decidedly more dramatic. This would seem to be the final position of Alberti the architect and the critic of architecture, pointedly and unfortunately the critic of his own.



Mantua, S. Andrea, plan.

The motif of the broken architrave can be referred to medieval precedent, although it probably derives from the arch at Orange. The organization of the rotunda of the Annunziata (PL. 58) certainly derives from the Minerva Medica in Rome. Here Alberti could have realized the program envisaged earlier for the Tempio Malatestiano and betrayed by his builders at S. Andrea — the program of placing a hemispherical dome, like those of the Pantheon or the Baths of Diocletian, over a unified nave. The dream of antiquity, however, seems to have

lost its attraction for Alberti, whose life was now drawing to a close. Instead, there came forward another idea based on late antiquity, tending to relax the consistency of the wall, to overcome the elementary stereometry by breaking up the circle and the cylinder with the atmospheric openings of nine great niches. Given the organization of the church and the earlier work by Michelozzo, this dream could not be carried out. The transition from a unified longitudinal space to a circular choir is, moreover, such a difficult problem that it could not be resolved until much later when the formal vocabulary had been freed from the restraining limits of the 15th century. Alberti himself had tested it at Rimini (we do not know whether the absence of the transept is due to him or to Matteo), though he carefully avoided repeating it at S. Andrea, for which he provided a broad transept. Vignola did not wish to face this problem squarely in the Gesù, for, even though the lateral volumes under the dome continue the depth of the chapel, he has compressed the transept, but he has not eliminated it altogether. The first artistic solution of the problem is in the Redentore at Venice with Palladio's conception of set-back spaces and the illusionistic breaking up of the wall. Here at the Annunziata it is above all a question of cultural experience, which is of the greatest interest because it gives substance to Alberti's last researches. The "grammatical and syntactical" defects of this idea were quickly pointed out, first by Giovanni Aldobrandini and then by Vasari. The nine niches carved into the wall constitute a series of functionally useless chapels. The union of the church and the choir by means of an enormous arch is clumsy; the way its archivolt is required to follow the curve of the rotunda on one side and the plane of the wall on the other is a most unusual "compositional mode." The niches and arches without the screens of the Pantheon seem to lean back as a result of an optical effect that Vasari characterized as "extremely unfortunate." Even if we imagine it all white, free of decoration, as Alberti wanted it, this rotunda does not stand up. It does not have a "sense of proportion," it does not seem complete, nor does it have the energy to be more than half complete.

Why, then, did Alberti refuse to surrender to the opposition and assert in a haughty reply to objections that "it will be the most beautiful thing that ever was; they [i.e., the critics] do not understand it because they are not accustomed to see such things; when they do see it, it will seem more beautiful to them than a cruciform church," as a representative of the Gonzagas in Florence reported? What could his enemies have understood in a work that departs from the assonance formulated mathematically in parts, which had been the theoretical canon of Alberti? This assonance is now lost in atmospheric effects, in the rarefied mural shell, the control of the "design," the rigorous composition, the rational introduction of light. Any reply must rest on opinion and intuition, but the rotunda of the Annunziata, particularly if taken with the second project for the façade of S. Sebastiano, seems to indicate weariness, if not disgust, with the principles elaborated 20 years earlier by the theorist. Alberti's final architectural activity can be compared to the organic late work Sullivan did after his long structural experience and to the aggressively plastic researches of Le Corbusier after the 1930s, particularly his purist demonstrations. It is not accidental that a "baroque moment" has been mentioned — in an unsatisfactory yet suggestive manner — for all three. Far from being an arbitrary selection from an antique encyclopedia of forms, as Wittkower sees them, these works anticipate the Renaissance crisis of proportion and perspective. The theorist, the writer of treatises, does not have the time or the means to review his position. It is the moment in which the architect-critic embarrasses the writer with confusing insights which will be slowly rediscovered and reexperienced by Palladio and Scamozzi and by the mannerists and the architects of the 17th century, and which will not find a conceptual schematization for two more centuries. Alberti seems to have known intuitively the relativity of proportions as geometrically conceived. He reveals a new world in which a measure, a relationship, a geometric figure no longer exists in itself as an eternal and autonomous value but as a function of changing human, figur-

ative, psychological, and luministic sensations. This is the crisis, or the overcoming of self, of Alberti's whole development — the discovery of irrational values, the incommensurability of spatial forms in light. We are at the chapel of Ronchamp or at Chandigarh looking back at the Savoye House or the Swiss Pavilion, to take up the admittedly imprecise analogy between Alberti and Le Corbusier again. This is a phase of his work that can be interpreted as a late vitality or a fervor born of the fear of growing old. In Alberti, however, it seems a stage that is perfectly consonant with the labored critical process of his building. In his final inspiration, in these unfinished works with their Michelangelesque scowl, he lacks certitude. New problems and cares well up. The "ordinatio," the "concinnitas," no longer serve Alberti on the eve of his death any more than the security of antique sources do. He is no longer supported by his faith in structural integrity, by the clarity of the visual web of the Palazzo Rucellai, by the reasoned poetry of S. Andrea and the interior of S. Sebastiano, by the touch of wit in the crowning of the Holy Sepulcher in the Rucellai Chapel. In the choir of the Annunziata there is a completely personal vision that was perhaps somewhat mysterious even for Alberti. The expressive phenomenology of this work has been interpreted as a return to late antique themes or as the foreshadowing of late-Renaissance and mannerist themes. These two periods are superficially so similar and historically so different that they underscore by antithesis the originality of the late work of Alberti the architect.

Bruno Zevi

Our knowledge of Alberti's other artistic activities is relatively slight. A study that could systematically bring together contemporary statements on his role as an artist does not exist. There are numerous references to his activity as a painter and as a sculptor. In all probability this activity can be referred to the period of his stay in Florence (1434-36) during the exile of Pope Eugenius IV from Rome, which had revolted against him. It can be related as well to Donatello, whom he had known in Rome, and to Brunelleschi, particularly for perspective. He is said to have painted, carved, and modeled in wax during his leisure hours (Bonucci, I, p. 26; IV, p. 46). Recent attributions by Kurt Badt are unconvincing (Mitt. des Kunsthistorischen Inst. in Florenz, VIII, 1958, fasc. 2, pp. 78-87). Landino owned works by Alberti and mentions them in his *Apologia dei Fiorentini*. In the dedication of *De re aedificatoria* to Lorenzo de' Medici, Poliziano calls him an excellent painter and sculptor. Borghini names him among the painters (*Riposo*, Florence, 1584, p. 42). Razzi (*Compendi delle vite dei pittori*, Codice nazionale fiorentino, 23, XVII, fol. 57) and Vasari (Milanese ed., II, p. 546; Am. ed., trans. Blashfield and Hopkins, II, p. 60) place slight value on his painting, but both admit he is a good draftsman and designer of perspectives. Vasari in particular praises his ability to render an architectural project; he mentions a drawing in his collection of a plan by Alberti to cover Ponte S. Angelo with a roof. He also mentions a predella containing "three little narrative scenes and several perspectives" in a destroyed chapel on the Ponte alla Carraia, a self-portrait in the Rucellai Palace done with a convex mirror in the Flemish manner, and a panel with rather large figures done in "chiaro e scuro." He says further that Alberti painted a perspectival view of Venice showing St. Mark's, the figures being executed by other hands. The whole, he says, was one of the best creations of his activity as a painter. If Vasari's statements are correct, we can deduce a considerable variety of tendencies, from a close adherence to Tuscan interest in monumentality to experiments based on Flemish influences. His connections with the artists of Florence, with whom a fruitful interaction must have taken place, has yet to be investigated. Many perspective and geometric designs from treatises have been published by Bonucci.

Alberti's theoretical interest in the theater also deserves a brief glance. His reconstructions of ancient theaters in his *De re aedificatoria* had an extraordinary effect on the development of later theater design. At the court of Ferrara, where the first consciously classic dramas were staged, Prisciano freely

paraphrased passages from Alberti (Ms. of the Biblioteca Estense at Modena). It is possible that the project for the first permanent theater of modern times presented to Raffaello Riario in 1486 (in the dedication of Vitruvius's *De Architectura* in an edition of Veroli), originated from an idea of Alberti's.

As for stage design, Alberti is probably chiefly responsible for the modern concept of the scene as a perspective box. His only comedy, *Philodoxeus*, composed at Bologna about 1426, is the first to use a unified setting in the Latin manner — that is, as the 15th century understood Roman antiquity. The characters, who are treated as allegorical types with clearly defined attributes after the manner of Lucian, carry out the action of the play in a street. The buildings and their location can be deduced approximately from the text and from indications in Alberti's other writings. A hypothetical reconstruction of this Humanistic stage would show close affinities with the anonymous architectural perspectives at Urbino, Berlin, and Baltimore, which were certainly done well after Alberti's death (cf. R. Krautheimer, "The Tragic and Comic Scene of the Renaissance," *GBA*, 1948; P. Sanpaolosi, "Le prospettive architettoniche di Urbino, di Baltimore e di Berlino," *BArte*, Oct.-Dec., 1949, pp. 322-37; E. Battisti, "La visualizzazione della scena della commedia umanistica," *Comm.*, 1957, 4, p. 19).

In addition to his literary activity, Alberti occupied an important position as artistic adviser at the papal court for sculpture, as well as for architecture, as can be deduced from various contemporary and later statements. His connection with the grandiose city-planning projects for the transformation of the Borgo and the area between the Castel S. Angelo and St. Peter's was proposed by G. Dehio ("Die Bauprojekte Nikolaus V und Leon Battista Alberti," *RepfKw*, III, 1880) on the basis of stylistic characteristics and ideas expressed by the master. This project, attributed to Nicholas V and Alberti also by Manetti (*Muratori, Rerum Italicarum Scriptores*, III, 2, col. 949 ff.), has recently been discussed by T. Magnuson ("The Project of Nicholas V for Rebuilding the Borgo Leonino, Rome," *AB*, June, 1954, p. 89 ff.), who provides a schematic reconstruction of it, indicating the parts that were executed. (See also E. Battisti, "Il Significato Simbolico della Cappella Sistina," *Comm.*, 1957, 2, pp. 96-104.)

Alberti's influence was extremely widespread in 15th-century Roman art and particularly in architecture. This fact could also be further indication of his being frequently consulted as an adviser. However, it has not yet been possible to identify any original works in Rome with Alberti.

Eugenio BATTISTI

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ALBERTI'S THOUGHT. Nowhere in his extensive writings did Alberti attempt to formulate his thought systematically or even to give it consistent organization. Certain recurrent subjects which he constantly develops nevertheless make his point of view clear. A moralist in the classical sense of the word, Alberti took pains to define his position in his works. In one of his most cogent and profound writings, *Momus* (apparently composed between 1443 and 1450, after his return from Rome), he states his attitude albeit in a somewhat indirect fashion. In Book III, he says: "There are certain kinds of men, called philosophers, many of whom have dared to propound new and unheard-of worlds." While such men claim to be engaged in the most subtle investigations, they actually produce nothing but vain and idle chatter. Although in constant complete disagreement among themselves, he continues, they still assume an overbearing attitude toward others, on whom they would like to impose their own points of view. While paying lip service to reason, they want others to abandon it and submit to their authority. Together with this outspoken renunciation of tradition in the name of reason, Alberti shows a marked preference for two thinkers. Socrates and Democritus alone, he declares, are worthy of respect, because they have the merit of "having always spoken seriously and reasonably." Of the two, he regards Socrates especially as a paragon for his "passionate quest of truth and his cult of probity." Next to him ranks Democritus, ever ready to immerse himself completely in the study of nature. "One day I met Democritus who was watching a crab that was carried along by a rushing stream nearby. His expression was so astonished and his gaze so stupefied that I myself could only wonder at his wonderment."

These passages from *Momus* are revealing. Deep insight into nature and moral wisdom are the pervading themes of Alberti's thought, which is characterized by a manner of presenting his ideas and a style of argumentation that shows him to be a thinker who is neither a professional philosopher nor a professor, but is simple to the point of humility. In the "fable" of *Momus*, Mercury descends to earth and sees Socrates, "whom he takes for some low-class fellow." The anonymous and well-informed author of the life of Alberti tells us that "to solace his spirits" he used to frequent the "workshops of industrious artisans" in order to watch them at work and thus derive certain moral lessons "almost as seriously as if he were a censor." He shows Alberti engaged in discussion and learning from "smiths, builders, shipwrights, and shoemakers," or else contemplating nature and studying all its forms; "he declared that he venerated the delights of nature [and] that whatever beauty men could create with their invention was close to the divine" — a combination of Socrates and Democritus.

In the dialogues *Della tranquillità dell'animo* (*On Peace of Mind*), which date from 1442, Alberti clearly sets forth as a theory his combined interest in practical matters and scientific curiosity: "In my own case, nothing has been so useful for understanding as research and mathematical demonstrations, which, after much study, can be adapted and applied to some practical purpose." In the last analysis, all Alberti's investigations are directed toward mankind, and every type of knowledge is brought together within human scope.

It is precisely this, however, which presents Alberti with his most troublesome problem. What is the relation between man's work, his activity, his *virtù*, and the world, external reality itself, whether considered under the aspect of those natural laws which consistently govern it, or through manifestations of the accidental and unpredictable? This problem cannot be reduced, as some have tried to do, simply to the relationship between *virtù* and chance, in the form of those critical situations which confront individuals or groups who in their daily life are incapable of coping with a changing historical situation and thus can no longer adapt themselves to the harsh demands of reality. The question pondered by Alberti is much more profound and comprehensive; it involves an inquiry into man's significance in relation to the physical world and to society. What, if any, are man's potentialities, and how and to what extent can he realize them? Needless to say, Alberti gives no clear-cut answer; but however indirectly, he nevertheless reveals his implicit outlook and his total concept of nature and natural laws, science and art, mankind, society, and history.

Ever since his youth and those unhappy years during which he studied law at Bologna, Alberti had sought clear insights into these very questions. *Philodoxeus*, of which the first version appeared in 1426, was successfully passed off as a classical work by an unknown author, Lepidus, and won the distinction of being included (as a work by Carlo Marsuppini) among the selections in the anthology *Margarita poetica*, compiled by the *cubicularius* (chamberlain) of Pius II, Albrecht von Eyb. This drama is an austere allegory of human life. As he was later to admit when he revised and republished it, in order to assuage his own unhappiness Alberti wished to show that "the diligent and industrious man, no less than the rich and fortunate, may attain renown." The *dramatis personae* in this work are not human beings but personifications of abstract concepts; significantly, it is Chronos, Time, the father of Aetia, Truth, who succeeds in resolving differences and overcoming difficulties. Here we have in embryo the whole character of Alberti's thought: fanciful and dramatic, more felicitous in its "images" and dialogues than in the treatises, shot through with a bitter irony, marked by a taste for the paradoxical and a fondness for the pseudonym and for anonymity, tending to speak from behind a mask that is alternately that of comedy and that of tragedy, or sometimes even assuming the guise of a prophet or astrologer — as, for example, in the *Letter to Paolo Toscanelli* in which, according to the anonymous biographer, Alberti tried to foretell the future course of world history. We should remember that several of Alberti's writings, going under the names of ancient or modern writers, were disseminated throughout Europe, were the objects of researches by Erasmus, and were frequently connected with Lucian, the author whom Alberti both admired and imitated, though he himself was often far more profound.

In *De commodis litterarum atque incommodis*, written a year or so after the *Philodoxeus* and still full of recollections of his student days, Alberti began to delve more deeply into another aspect of his sphere of interest, as usual raising a great number of questions. He deals here with the value of the classics and the danger of remaining too deeply under their sway, "almost as if it were enough for educated men to absorb learning through their ears rather than through their hearts." He draws in detail the picture of the man who devotes himself to study and the *arti* (various branches of learning) and for whom there is "nothing whatsoever, no matter how trivial, which he does not regard as a suitable object for his investigations, for he seeks to achieve mastery in every subject." This type of man must always remain dissatisfied, restless, and anxious, for "of all the kinds of anxiety, that induced by study is the most persistent,

the most boundless, and the most enormous of all." "Thus it comes about that one no longer has the slightest peace of mind or body, but remains melancholy and solitary, worn out with fatigue, with constant wakefulness, strange thoughts, grandiose schemes, and burning cares." The student should seek to assimilate what he learns from his theoretical investigations, reading of books, and analysis of documents either by traveling, which is both useful and pleasant, or by contemplating nature and looking directly at monuments: "going for walks in the city or through the countryside, and contemplating all kinds of things — temples, theaters, city walls, and edifices of every kind — or at other times going to look at natural sites of the most pleasant, agreeable, or imposing sort." Yet the studious man is never the victim of self-deception: since wisdom and the treasures of the mind are the best things life has to offer, good fortune will automatically come to him, and with fortune will come worldly renown.

This appeal for disinterested research and the exaltation of the virtuous man is accompanied throughout Alberti's writings by a profound pessimism. Occasionally it takes the form of a particularly biting irony; at other times it seems to be an anguish so deep as to verge on desperation. The virtuous man takes no heed of misfortune, but should constantly bear in mind that fate is blind and that probity or high intellectual attainment are always doomed to be the victims of adversity. As one reads the *Intercoenales*, the brief Latin essays generally in the form of dialogues which Alberti wrote in great number from the time of his sojourn in Bologna up to about 1440, and of which 17 have survived, one realizes that he has not resolved the conflict between *virtù* and fortune. The virtuous man must face the iron decrees of fate and the caprices of chance — the former unchanging and inexorable, the latter blind and senseless. Thus, if there is any constant thing in this world it lies in the derision of *virtù*; even the gods are oblivious to it, if they do not actually disdain it. Some of these passages, at times of great beauty, have a cynical rather than a stoical tone. Frequently a controversial note concerning religion is interwoven which goes beyond the customary satirical comments on the monks and the corruption of the clergy ("sola superstitione religiosi nomen captant") to strike at the entire concept of revealed religion, even if not at the idea of some absolute source of existence. There is a pervasive bitterness in his eulogy of the fly, a creature which taught philosophers wisdom and was exalted as a model of piety because of its habit of alighting upon the offerings to the gods. Flies, industrious, intelligent, and active, could change the face of nature and move mountains and seas; to prevent this inconceivable alteration of the world ("opus nature infensum") Persephone condemned them to short life and premature death. Equally bitter is Alberti's touching and transparently autobiographical eulogy of the dog who dies of poison in the prime of life after living wisely all his days, always repaying the wickedness of others with goodness and affection.

In some of the *Intercoenales*, although there is already an increasing emphasis on social values, a different solution is proposed for the puzzling relationship between man and society. This is the concept that "the reasons for things," the underlying causes of our own existence and of all else, those *logoi* of Stoic origin which are referred to ever more frequently in Alberti's writings, might through logical cognition, scientific knowledge, and mathematical procedures become the bases for a new mastery over things. One might say that when, in his *Libri della famiglia* (*On the Family*), completed in 1441, Alberti turns to a consideration of education and of communal living, he casts a rather different light on some of his convictions. "Letters," study of the classics, the cultivation of one's soul, are regarded as essential for the upbringing of free men, capable of living in wise and prosperous families in happy and worthy city-states. The ideal of the solitary, melancholy scholar is supplanted by that of the virtuous man of action, diligently engaged in worthwhile activities, overcoming circumstances and bending events to his own purposes (*simile per virtù a un dio terrestre*, "through his force of character like an earthly god"), growing rich in both spiritual and worldly goods. In-

stead of plebeians, there is now a free citizenry, lively and competent, critical, and able to express its ideas clearly so that they can be understood and debated. The Tuscans are "talkative and slanderous, ready to speak ill of everyone and praise no one, given to mockery and gross libel." In spite of all this, the citizens of Tuscany are praiseworthy, since "all this is permissible to them because of their long-established freedom." The foreword to the third book of *On the Family* shows us Alberti as a man of letters who, although capable of casting his writings in the classic tongue, defends his use of the vernacular not only on historical grounds but also out of human and "civic" considerations: "I would rather give pleasure to many than please but a few . . . I do not wish to escape being understood and judged by all our citizens." The learned Greek and Roman writers of antiquity spoke to all, "in order to be of service to all their fellow citizens"; this is the refrain of Alberti's thesis.

The foreword to *On the Family* no longer harps upon the inequities of fortune but emphasizes the triumphant force of virtue: "Fortune is not to be seized by power, nor as some fools believe can victory easily be won by those who are themselves unwilling to be vanquished. Only he who willingly submits himself to fortune can bear its yoke." At the same time there is a keen awareness of society and of temporal interests. From now on, Alberti's language resembles that of the tempting demon of St. Potitus: *homines hominum causa natos esse*, "men are born for their fellow men." The cynical themes have diminished, though the stoical overtones persist and the stoicism is increasingly like that of Cicero. The praise of virtue is constant and in fact constitutes the central motive of *De iciarchia* (1470), the final summation among Alberti's moral treatises. Now, however, virtue has learned how to adapt itself to reality, and this has been achieved precisely by seeking out those *logoi*, the "focal points" or "underlying reasons" immanent in everything: "From nature come certain sparks which enter man's soul and light his mind with rays of reason."

Thus, in the midst of his ever-renewed disregard for historical actualities and even while realizing the inevitable transience of things, Alberti achieves an explanation for the meaning of universal laws and the reasons for existence, and then of the possibilities which knowledge opens up to man. From the solitary and contemptuous man of probity, whose indomitable spirit is battered by the relentless waves of life's stream, which constantly threaten to overwhelm him, evolves the sage architect who is a competent manager, who raises a family and rears cities, houses, and temples. Virtue vanquishes force; knowledge uncovers the "reasons" and avails itself of them. By means of logical thinking, the artisan transforms the man of letters into the builder, thrusts him into the path of reality, makes him work, takes him out of his solitude. Although the melancholy awareness of his limitations has not wholly disappeared, fruitful accomplishment has given him confidence. Gloomy pessimism is supplanted by serene wisdom.

There is a highly significant statement in the dedication to Brunelleschi of the Italian edition of the *Treatise on Painting* (*Trattato della pittura*). As Alberti considers artists, he declares: "I believe the power of acquiring wide fame in any art or science lies in our industry and diligence more than in the times or in the gifts of fortune." Thus perceiving the effective power of perseverance, he also seems to draw a connection between "Pippo the architect" (Brunelleschi) and his own studies of the mathematical roots underlying all nature. Inevitably one relates the science of Paolo Toscanelli and the art of Brunelleschi to Alberti's systematic delving into the mathematical bases of knowledge regarded as a liberating force. The dedication of the treatise to Brunelleschi is a kind of parallel to the dedication of the *Intercoenales* to Toscanelli. Alberti seems to have traveled along a lengthy road, the stages of which represent his successive convictions; just as, for example, in the *Descriptio urbis Romae* Alberti's "learned friends" persuade him to rediscover *ex mathematicis instrumentis* the dimensions and forms of the ancient city. His studies in physics and mathematics, which constantly draw closer together, seem to show us the point at which morality, science, and art merge into one. "From intellect comes invention; from experience comes knowledge; from judgment

comes discrimination; from taking counsel the ability to resolve difficulties; and through perfecting one's art one finally attains the goal that has been set. I believe that prudence and mature deliberation are the foundation of almost everything; although other virtues, such as humanity, benevolence, modesty, and uprightness . . . are qualities without which no one, in my opinion, is worthy of being deemed a man." In this portrait which Alberti draws of the ideal architect (*De re aedificatoria*, IX, 10) the clear image of the "virtuous" man of the 15th century is not solely a rhetorical figure. "By the marvelous power of logical reasoning" he performs most useful acts for mankind in both his public and his private life and achieves welcome and worthwhile things.

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ALBERTI'S TREATISES ON ART. Alberti's activity as a theoretical writer on the arts or the author of technical treatises begins with *Della statua* (*On Sculpture*). Some scholars have dated this work as late as after 1464, on the basis of its dedication to Giovanni Busi, Bishop of Aleria. This, however, is insufficient evidence, for in other instances Alberti altered his previous dedications, and the general tenor of the text and its sparseness indicate a youthful effort. The general principles he sets forth and his description of the methods which he calls *misura* (measuring of proportions) and *per dei termini* (definition of outlines) seem to foreshadow faintly the contents of his later work, *Della pittura* (*On Painting*), as if he were here producing a first draft in which the technical data were sketched out without any attempt to develop his theme or polish his style. Two specific references to a projected treatise on painting permit us to date the work in 1435.

The definition of sculpture in terms of *porre* (adding to, as in modeling wax or clay) and *levare* (taking away from, as in carving wood or stone) is noteworthy, and this distinction still remained fundamental in the 16th century. Alberti advises the artist to adopt a "correct theory and method," which should be derived from nature on the one hand and from strict intellectual discipline on the other. As a means of control he suggests two particular devices: the *modine*, or module, and the *diffinitore*, or delineator. The first of these is used to determine the general proportions of the figure, the second for the more precise definition of its specific characteristics. The canon of proportions is not a fixed one, but varies according to the height of the figure to be represented, thus permitting the artist a certain freedom in applying the general rule.

Even in this rather dry text, Alberti's keen interest in movement is already apparent. One can also perceive the impression his contact with Brunelleschi made upon him, and his enthusiasm for the new logical order and mathematical basis for art.

The full force of this revelation, however, comes out even more vividly in *Della pittura* (*On Painting*). Here the technical procedures are given in much greater detail, and the text is expanded to allow Alberti to substantiate the methods he advocates by critical observations dealing with the esthetic principles

of style. As a result, he expounds systematically a total vision which is remarkably consonant with that of Brunelleschi and Masaccio, and even seems to anticipate the outlook of Piero della Francesca, or, even more, of Domenico Veneziano. At the same time, there remain traces of the Gothic, realistic and episodic, ascribable to Alberti's education in Padua and his frequent contacts thereafter with the taste of northern Italy. These contradictory tendencies persisted throughout his career, mitigated but never completely eradicated, even by the successive waves of Roman classicism with which he came into contact.

The Latin edition of the treatise *On Painting* was completed on Sept. 26, 1435, and bears a dedication to Gianfrancesco Gonzaga of Mantua; the Italian version, dedicated to Brunelleschi, is dated July 17, 1436. In this work, as Argan has pointed out, the combined references to Masaccio, Donatello, Luca della Robbia, and Ghiberti mark the achievement of a man of letters as well as of an artist. The three books of the treatise deal with the principles of painting — its essential character, its limitations, and its means of expression; with perspective; with the concept of beauty as a harmonious balance of science and poetry; and with the painter as Humanist in his dual aspect of a cultivated and a self-controlled man.

Painting, according to Alberti, is the science of space; its manner of interpreting life is derived from those root principles immanent in nature. The artist's vision deals with the data of experience, observed through sensory perception, but goes beyond these observations to the "form of things" — the plastic elements of lines, planes, colors, and lighting. Perspective enables him to create a three-dimensional spatial order which elevates the everyday world to the real and ideal level of man. Alberti's handling of perspective is qualified by his use of the *velo*, or reticulated net, a construction which with some adaptations was later taken up by writers of the Cinquecento and with which even Dürer experimented. This device enabled the artist to project onto a flat surface a cross section of the visual pyramid that has its apex in the eye and its base in the objects, extending these through the successive planes to the vanishing point at which the orthogonals seem to converge. Line is the contour of planes; painting is the science of surfaces, each of which is so placed in the composition as to appear in appropriate relation with all the others, so that taken together they seem to epitomize the artist's intelligence and power of harmonious rendering.

Alberti understood intuitively, in advance of Leonardo, the modification of color in distance through effects of aerial perspective. He does not pursue this subject, however, out of respect for an ideal conception of the integrity of forms which could not encompass such a notion. Although all tonal subtleties are accepted, they are considered in their mutual interaction and derive their values from a controlled light whose essential purpose is the construction of form. Colors are subordinated to a delicately modulated chiaroscuro scheme intended to achieve a definite, though not overemphatic, plasticity.

Alberti devotes much space to the canon of proportions and to the human scale as the basis for understanding everything: "man the measure of all things." The painter, "who may be regarded almost as another god," possesses the secrets of nature and recreates them through his *arte* (expert knowledge) *ingegno* (innate talent), and *studio* (diligent application). The mythical Narcissus who gazes at nature to see the reflection of his own beauty is taken as a symbol of art and the artist.

The subject of movement and gesture is very fully treated, with many insights that again seem almost to foreshadow Leonardo (as is also the case when Alberti deals with color and especially with the tones that shadows assume in reflected light). There is, however, a certain conciseness that is a psychological characteristic of the author's austere habit of mind. The examples from classical antiquity interpolated frequently in the text are always to the point and are used to lead to stylistic interpretations. Art is knowledge, and knowledge implies spiritual complexity. Alberti's Humanism retains definite non-Tuscan traces; certain subtleties, or a sort of eagerness to refer to experiences and facts of diverse cultural origins, remind one

that Alberti always retained vivid recollections of his education in northern Italy. According to Cipriani, he also manifests an assiduously historical bent which was somewhat later to find a counterpart, in Padua itself, in Mantegna. Especially valuable are Alberti's observations on the appropriate manner of placing one's subjects in order to form a harmonious composition. "Beauty" is everywhere subsumed, but never specifically defined, and it is always interpreted from both an objective and a subjective point of view.

The general scheme of the treatise, although tinged with certain Neoplatonic influences, is essentially Aristotelian. This is observable in the method of subdividing the text, comparable to the *Poetics* of Aristotle or the *Ars poetica* of Horace.

About 1438 Alberti wrote *De equo animante*, apropos of his projected monument (destroyed in the 18th cent.) to the father of Lionello d'Este. *Navis*, a discussion of the unsuccessful efforts to salvage a sunken Roman ship from Lake Nemi, dates from about 1448. The mathematical treatise *Ludi*, dedicated to Meliaduse d'Este, probably dates from between 1443 and 1448; its subject is the sounding of the depths of oceans and rivers, together with brief essays on hydraulics and, in a cursory fashion, ballistics. The date of *De lumularum quadratura* is uncertain, nor can one place precisely *De punctis et lineis apud pictores*, which, since it is scientific in character, was presumably written at about the same time. Of approximately this period, though probably slightly later, comes the little treatise on *Elements of Painting*. This was written originally in Italian and then translated into Latin for a certain Theodore (of Gaza?). The *Descriptio urbis Romae*, with its accompanying plan, may be connected with Alberti's second long sojourn in Rome after 1443, although alternatively, and by no means improbably, it may be regarded as the outcome of his first trips to Rome about 1432-34 and related to his new friendship with Chancellor Biagio Molin, to whom it is dedicated. A treatise on *Prospettiva* (*Perspective*), published by Bonucci as an authentic work by Alberti, is with good reason rejected on philological grounds. It does, however, show some relation to Alberti's thought and is, in fact, one of the first examples of works based directly upon his writing and, what is even rarer, strictly derived from him, though intermingled with influences from Ghiberti.

Finally, as the fruit of Alberti's profound meditations on classic architecture and his increasing inventive fantasy, combined with his many architectural schemes, he produced in his maturity the *De re aedificatoria*. This work, which had occupied his mind for many years and appeared in an incomplete form in 1452, was not fully published until 1485, when it was issued posthumously.

It bore a preface by Poliziano and was dedicated to Lorenzo the Magnificent, in accordance with the author's own intention, although originally he had wished to dedicate it to Federico da Montefeltro.

In this work, with its formal, rhetorical style and its pompous display of culture and classical erudition, the Neoplatonic tone is accentuated. Though more abstruse than the *De pictura*, it achieved far greater fame both among Alberti's contemporaries and with posterity. Either openly or tacitly it was used as a basic source by celebrated architects — Francesco di Giorgio, Palladio, and Vignola among others. In the work Alberti painstakingly investigates those intellectual qualities required for architectural design (Book I) and deals with its logical construction, taking into account the stylistic effects that are the outcome of the manner in which the entire complex is organized and its individual elements disposed. (Decorative motifs are included among the "features.") Alberti also discusses the organization of space that results from the way in which the architectural forms are arranged. Through *certa ratio et via* (correct theory and method), the architect in the course of executing his work so develops his original concept as to bring to it *commodatio* (convenience), harmony, and well-ordered forms. Steeped in knowledge of those natural laws that govern weight, cohesion, and the manner of interconnecting the various parts, and bearing constantly in mind those factors requisite for the construction of a habitation worthy of man, the architect finally achieves his end result of beauty.

Alberti takes up again, with new application, the elements fundamental to painting. Among the strict mathematical formulas and the broad range of civil requirements that regulate architecture, there is always implicit an indefinable quality that transmutes the whole: the *certus numerus* or *gratus ordo* (the "right number" or "pleasing order"). Sensibility is heightened by cultivating the *genialis* (good will). The same simplicity, discretion, and discipline that govern the painting of figures enable the architect to compose the *modica membra* (separate parts) of his buildings in accordance with the rhythmic principles of an innate "musical" logic, or *parilitas* (analogy), like the sounding of the chords of a lyre.

In his discussion of the *materia* (materials) of building in Book II, Alberti proceeds from an objective consideration of their physical properties to the formulation of stylistic principles. Speaking of architectural models, he returns to a consideration of methods of construction and the function of criticism, which entails a close examination of each of the parts and a comparison of them in accordance with a true and individual system of balanced relationships (as may in fact be observed in several actual buildings constructed by Alberti). He attempts to distinguish between pictorial and architectural design and lays down the principle that what inevitably determines the character of the whole and sums up its plastic and spatial qualities is the drawing of the plan, whether ground plan or elevation. (This section is so poorly rendered in an Italian translation which Bonucci believed to be an authentic work of Alberti's that it alone should suffice to prove this version to be spurious.) Beyond certain considerations derived from his own experience as a practicing architect, qualified by the precedents set by previous buildings, one can perceive Alberti's desire to unify the exterior and interior in such a way as to suggest the character of the enclosed space — a total containment like that of Roman architecture, organized in accordance with Renaissance principles but in any case essentially unified, rather than sharply subdivided in the manner of Brunelleschi. Alberti's theoretical predilection for circular or spherical forms was subsequently to find expression in the preference he showed as a practicing architect; for example, at Mantua.

Book III, *De opere*, establishes the principle that all building construction must be based on over-all harmony. Vitruvius, the source of knowledge of mechanics for so many of Alberti's contemporaries, is radically altered, whether intentionally or not. His influence nevertheless remains very strong throughout the treatise; it is especially apparent in certain passages dealing with particular technical procedures, with theories of proportion, or with general points of view — just as earlier his *scaenographia* had influenced Brunelleschi, although only tangentially, as Argan has shown.

Book IV, *Opus universorum* (On Works in General), takes up the theme of the ideal city, followed in Book V, *Opus relative*, by the consideration of individual buildings. Here are chapters which, for all their prolixity, are of the greatest interest, because of both the strict schematization imposed upon the urban complex and the knowing and expert distribution of the city's separate quarters. The purely theoretical ideal, however, is constantly modified in order to accommodate the practical requirements of the city itself as well as those of its individual inhabitants. We have here no utopia such as the "Sforzinda" of Alberti's contemporary, Filarete, but rather a most perceptive foreshadowing of modern theories regarding the functional and social implications of city planning.

In Books VI to IX, Alberti discusses with poetic delicacy the topic of *ornamentum* (decoration), an element closely related to *pulchritudo* (beauty) as an intrinsic requirement of architectural forms. Out of this comes a definition of "beauty" which is neither a mere abstraction nor a rigid formula, but rather that delight which springs from the artist's intuition and critical speculation. This section retains some of the freshness and freedom of the youthful period in which he wrote *De pictura*. When Alberti strives to define ornament separately, however, it becomes a theoretical rather than an intuitive matter and seems almost like an extraneously applied element. This theoretical point of view also represents the furthest stage which a man

of the Quattrocento could reach, within his general intention of giving procedures for an artist to follow, by means of categories. Ornament therefore must be an *affictio* (something applied); the artist can resolve this difficulty, however, if he knows how to make of this *complementum* (auxiliary part, or adjunct) a *perfusio toto corpore* (something that permeates the whole). In Alberti's discussion of the adornment of temples, which actually is a study of their entire construction, one discerns an emotional tension that is like a psychological excitation — still another evidence of the northern component in Alberti's make-up.

The treatise concludes in Book X with a discussion of the placement of the ideal city in its natural setting. As is the case with his projects for individual buildings, and even some of those which he actually erected, Alberti here approaches a threshold. While the musical, delicate *consonantia partium* (harmony of the parts) remains intact, a new ideal is manifest in which forms penetrate the exterior space. In the vision of the city, also, there is a premonition of city planning that opens the way to the development of modern concepts. This leads toward an articulation of the various elements, not only in accordance with the functional requirements of urban architecture but also with a view to their wider extension into the surrounding landscape, in a vital relationship with nature that allows it to enter into the architectural scheme as a concomitant and even determining factor.

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Illustrations: pls. 50-58; 4 figs. in text.

ALGARDI, ALESSANDRO. Bolognese-Roman sculptor (b. Bologna, 1595, d. Rome, 1654). Trained by Conventi and the Carracci school, Algardi first executed minor works in ivory and bronze for Duke Ferdinand Gonzaga in Mantua and then traveled by way of Venice to Rome, where he remained. After his arrival in 1625 Algardi worked on restorations of ancient sculpture for Cardinal Ludovico Ludovisi and then very gradually achieved a reputation as a sculptor, especially of portraits and religious themes. In 1639 he was elected Principe of the Academy of St. Luke. Algardi's greatest opportunities came in 1644 at the accession of Innocent X, when artists patronized by the preceding pope, Urban VIII, and his Barberini family, notably G. L. Bernini, were temporarily out of favor. Thus, in the last decade of Algardi's life it was he, rather than Bernini, who received the most important papal commissions.

Algardi's first major work, the marble group of *S. Filippo Neri and the Angel* (S. Maria in Vallicella, 1640) was preceded by a series of portrait busts, most of which were executed post-

humously for tombs, and by separate figures for different purposes, from the charming allegory of *Sleep* (Villa Borghese) to the representations of *St. Mary Magdalene* and *St. John* for the Bandini Chapel, S. Silvestro al Quirinale. The *Tomb of Leo XI* (Vatican, St. Peter's, 1634-52) became a model of formal composition for later sculptors. Algardi's activity as one of the principal artists for Innocent X included the bronze portrait of the pope (Palazzo dei Conservatori, 1645-50; PL. II, 164), the marble relief of *Leo and Attila* (St. Peter's, 1645-53; PL. II, 164), a group of portrait busts of Innocent X and his family (Palazzo Doria, 1645-54), and the supervision of the papal Villa Doria-Pamphili. A great part of Algardi's life and work in Rome was influenced by his origin; he continued to have Bolognese friends, such as the painter Domenichino, and patrons, such as Cardinal Ludovisi and the Spada family. For this family Algardi executed a large free-standing group in marble and a small gilded bronze relief of the *Beheading of St. Paul* (Bologna, S. Paolo, 1647).

Algardi's reputation has suffered unnecessarily by comparison with that of Bernini. Judged on its own merits, Algardi's work commands respect for its quiet competence and dignity and is often impressive by virtue of its very restraint and sensitivity. Algardi may also be valued as a teacher whose style was emulated both in Italy and France for decades after his death. Algardi's special contributions include his distinguished series of portraits with their fine balance between naturalism and idealism (G. G. Millini, S. Maria del Popolo, 1629; *Donna Olimpia Maidalchini*, Palazzo Doria, ca. 1650; *Cardinal Zaccaria*, Florence, Ojetti Coll., 1637) and the relief of *Leo and Attila* with its great breadth and energy. See also BAROQUE ART and PL. II, 168.

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ALKAMENES (Alcamenes). Greek sculptor of the 5th century B.C., a native of the island of Lemnos. He probably belonged to a family of tenant farmers (Gr. *klerouchoi*) of Athens and hence was referred to as an Athenian. Younger than Phidias, he was first the pupil and perhaps later the rival of this master. When Phidias left Athens, the city commissioned him with the most important religious statues. Pausanias attributes the western pediment of the Temple of Zeus at Olympia to him and although the ascription is dubious, there is no chronological difficulty. According to Pliny, Alkamenes flourished about 448 B.C., which would exclude the existence of two artists bearing the same name. He must have been active until well into the second half of the century, since his last dated work is the colossal relief representing Athena and Herakles, dedicated by Thrasybulus in Thebes shortly after 403 and now completely lost. Alkamenes worked chiefly in Athens. On the basis of a doubtful addition to an inscription found at Cyrene, he was thought to have worked there also, but this appears improbable. On the other hand, a statue by him of Asklepios was certainly dedicated at Mantinea, although the work itself is known only through late coins.

WORKS. a. *Extant works:* *Prokne and Itys* (PL. 59) a marble group, 6 ft. high, dedicated by Alkamenes on the Acropolis at Athens between the Parthenon and the Erechtheion, and now in the Acropolis Museum (S. Casson, *Cat. of the Acropolis Mus.*, 1921, II, nos. 1358 and 2785). Langlotz and others consider this to be a copy only.

b. *Lost works:* *Hekate on the Tower* (Gr. *epipyrgidia*), placed on the balustrade of Athena Nike in Athens after 432 B.C. Derivations to be seen on coins (J. N. Svoronos, *Monnaies d'Athènes*, pls. 74, 8; 77, 17) and in numerous Hekateia (PL. 59), which differ, however, from one another: Leningrad (O. Waldhauer, *Ermitage*, no. 258); Vienna (H. Sitte, *Ein attisches Hekateion*, ÖJh, XIII, 1910, pp. 87-94, pls. III-IV); Leiden (G. Lippold, *GP*, pls. 67, 1); etc. - *Dionysos*, in gold and ivory, executed for the temple erected after 421 at the foot of the Acropolis near the theater; the foundations for the square base of this statue are still in existence (16 ft., 5 in. square). The god was represented in a seated position, and it is possible that an echo of this work survives in a statuette in the Leningrad Museum (O. Waldhauer, *op. cit.*, no. 9), and also on Greek and Roman coins

(L. Lacroix, *Les reproductions des statues sur les monnaies grecques*, Liège, 1949, p. 291 ff.). Langlotz, however, maintains that the *Dionysos* was a standing figure, known from a copy formerly in the Garden of the Pigna in the Vatican and in variants of the 4th century. - *Asklepios*, at Mantinea, earlier than 418 B.C., reproduced on coins (F. Imhoof-Blumer and Gardner, *Numismatic Commentary*, I, pl. 15). - *Hephaistos* and possibly *Athena Hephaisteia*, in bronze, made for the temple near the Agora in Athens. The deformity of the god was suggested so discreetly that it was scarcely visible beneath the drapery. The *Chiaramonti Bust* in the Vatican Museum (BrBr, 244), of which the form of the face somewhat resembles the *Hermes*, may recall the head of this statue. The complete statue is perhaps reproduced in relief on lamps found in Athens. Athenian inscriptions (IG, I, 370-1) date the statue between the years 421-20 or 416-15 B.C. and indicate that it was part of a group, the other figure being a bronze *Athena* with an *anthemon* in tin beside her. Numerous copies appear to be derived from this *Athena*, now unfortunately all headless; although an idea of the head may perhaps be obtained from a variant in Kassel. The most noted copy of the statue was found at Cherchel (Reisch, *Athena Hephaisteia*, ÖJh, I, 1898, p. 55 f.; for the copies: E. Bouchard-Colozier, *Libyca*, I, 1953, p. 265 ff.); this identification is doubtful. The figures stood in the *Hephaisteion*, generally identified with the temple known as the *Theseum*. Earlier doubts on the identification of this work seem to be dispelled by the discovery in the temple of two blocks belonging to the base of the group. These blocks are in Eleusinian marble and were adorned on the front with figures, perhaps 12 in number and more probably in marble than in metal, representing the myth of the birth of Erichthonios. Some neo-Attic reliefs, now in the Louvre and Vatican Museums, are perhaps derived from these. (For a reconstruction of the group and base, see S. Pappaspiridi Karouzos, *AM*, 1954-55, p. 67). Langlotz, who does not accept the attribution to Alkamenes, sees a derivation of *Athena Hephaisteia* in the Hope-Farnese type. - *Athena and Herakles*, a colossal relief in Pentelic marble, votive offering of Thrasybulus in the Temple of Herakles at Thebes, after the victory over the Thirty Tyrants (403 B.C.). - *Aphrodite in the Garden* (ἐν κήποις), in marble, placed in one of the sanctuaries of the goddess near the Ilyseus. This was perhaps the statue made in a competition with Agorakritos, mentioned by Pliny. The attempts made to identify this *Aphrodite* with the type of the so-called "Aphrodite of Fréjus" or with that of Euterpe or, more recently, with the seated figure known as "Olympias" (E. Langlotz, *Aphrodite in den Gärten*, Sb Heidelberg, 1953-54, 2), are not convincing. According to a somewhat sounder hypothesis (G. Guidi, *L'Aphrodite del Mercato*, *AfrIt*, IV, 1931, pp. 1-31; G. Gullini, *Aphrodite ἐν κήποις*, *RendPontAcc*, XXI, 1945-46, pp. 151-62), renderings of the head of this statue are to be found in many copies and especially in the herm discovered at Leptis Magna, although the rather severe lines of these suggest a bronze original, which makes the identification doubtful. The theory that in the original work the goddess was represented in the form of a herm is completely erroneous and arose from a misinterpretation of the text of Pausanias. - *Ares*, in the Temple of Ares in the Agora at Athens, tentatively identified in copies, the most famous of which is the *Borghese Ares* (Louvre; PL. III, 361). List of copies: D. Mustilli, *Mus. Mussolini*, p. 128, pl. LXXX, 17. For the Lecce copy: R. Bartoccini, *Dioniso*, V, 1935, p. 105 ff.; P. Pace, *Dioniso*, X, 1947, p. 272. - *Hermes*, bearded, archaistic in style, probably popularly known as the "Hermes Propylaios" (of the Gateway). Possibly referred to by Pausanias (I, 22, 8), who, however, does not name the sculptor. The inscriptions on two herms of *Hermes*, found respectively at Pergamon (now in the Istanbul Mus.; G. Mendel, *Musées Impériaux Ottomans, Cat. des sculpt. grecques, romaines et byzantines*, Constantinople, 1912, no. 527) and Ephesus (C. Praschniker, *ÖJh*, XXIX, 1935, p. 23 ff.) state that the original was by Alkamenes. Other copies in Berlin (C. Blümel, *Kat. Mus. Berlin*, IV, K 133, pl. 16) and elsewhere (for list and discussion: C. Praschniker, *loc. cit.*). - *Hera*, in a temple between Athens and Phaleron. Reproduced as headpieces of Athenian decrees (Petersen, *Here von Alkamenes*, *RM*, IV, 1889, pp. 65-74). - *Athlete*, in bronze, engaged in a pentathlon event in the Greek games, known as the *enkrinomenos*, i.e., the "approved" athlete. The site of the original is unknown. Some have thought to recognize a derivation of it in the statue of a discobolus in the Vatican Museum (Amelung, *Vatikan, Kat.*, I, no. 324), which is decidedly Polyclitan in type. Only the head of this figure, which does not belong to it, might perhaps recall the work of Alkamenes.

c. *Attributed works:* *Asklepios*, known from copies and derivations (in Florence, Rome, Naples, etc.). The original was probably made for Athens after the introduction of the god's cult to that city. The figure is reproduced in reliefs from the Temple of Asklepios at Athens, with clearly discernible Attic characteristics. - The western pediment of the Temple of Zeus at Olympia is attributed to Alkamenes by Pausanias, but the style contradicts the ascription.

Some modern scholars (Schrader) would assign only the three corner figures in Pentelic marble to Alkamenes, replacements for three lost figures. — *The Maidens* (Gr. *korai*) and frieze of the Erechtheion (Schrader). — Part of the frieze on the balustrade round the temple of Athena Nike (Schrader). — Pediments of the Parthenon (Schrader). — Figures 36-42 on the east frieze of the Parthenon (A. Byvanck, *BABesch*, 1949-51, p. 11 ff.). Doubtful attributions of minor works are omitted here.

A reminiscence of the image of Hekate, in which, according to Pausanias, the goddess was shown for the first time with three distinct bodies, is to be seen in the *Hekateion* in Leiden (PL. 59), where the three forms of the goddess are shown attached, back to back, to a central pillar. In regard to the *Hermes*, the appreciable difference between the copies at Pergamon and Ephesus does not necessarily indicate two different originals, as has been suggested, since the interest of the copyist was more antiquarian than stylistic. The dedicator of the *Prokne and Itys* group (PL. 59), Alkamenes, is almost certainly to be identified with the sculptor. A group consisting of a female figure accompanied by a young boy was found on the site mentioned by Pausanias and was evidently inspired by the same theme. The strong vertical rhythm of the female figure contrasts with the slender, sinuous lines of the boy and helps to emphasize his expression of fear. The female head, although it is uncertain whether it belongs to the body, shows the hand of a great master and, even if the rendering is rather perfunctory, it appears to be a Greek original and not, as frequently asserted, a Roman copy. The figure of Prokne is similar to a statue found at Pergamon, the so-called "Aphrodite," and to numerous other works (the *Hera* in the Capitoline Museum, the *Boboli Hera* and the *Hera K* 172 in Berlin, etc.). It reappears, its lines more or less unchanged, in Attic reliefs of the end of the 5th century. It is possible that these figures are derivations from the *Hera* seen by Pausanias in the temple on the way to Phaleron, which was said to be by Alkamenes. There is less documentation for the other works of Alkamenes (see above: WORKS).

If, as the writer believes, the *Prokne and Itys* was actually by Alkamenes, then he was clearly following in the wake of Phidias, scarcely attenuating the amplitude of the figures, while using the draperies to emphasize the roundness and projection of the forms. However, the rich flow of folds reveals an actual study of reality, for they are never reduced to the sheer veils that so often occur in sculptures of the period. In the light of these characteristics it does not seem unreasonable to credit Alkamenes with the sculptural decoration of the Erechtheion and especially with the Maidens of the famous porch. For the same reason, also, it seems unlikely that he produced the capricious, turbulent draperies of the Nikes on the balustrade of the little temple on the bastion of the Acropolis, although these reliefs, at least in part, have been attributed to him. It is difficult to say with any degree of certainty what part he may have had in the Parthenon decoration. If the hypothesis that he produced figures 36-42 on the east frieze of the cella is correct, then it is clear that here his individuality was subordinated to the influence of Phidias, his master. These considerations render unacceptable, therefore, the not infrequent suggestion that the western pediment be assigned to him, for there the dynamic and pictorial character seems somewhat removed from the art of both Alkamenes and Phidias. The heads of the group appear to have been directly inspired by Phidias, if that of Prokne really belongs to the statue, although the serene, impassive aspect of Phidian heads is mingled here with a more complicated and human emotion. In the head of Hephaistos, as it is reproduced in the Vatican example, the nobility of the regular features is marked by a certain suggestion of earthly affliction. In the Acropolis group, likewise, there is a dramatic and emotional intensity that is foreign to the art of Phidias in the contrast between the verticality of the left side and the sinuous line on the right and in the attitude of the boy clinging timorously to his mother. These are the characteristics of an artist who, even if he did not create new types, was certainly not a pedestrian follower of Phidian art. That he was open to suggestions from other sources is also

clear, if he was the author of the original of the *Borghese Ares*, with its typically Attic head and body clearly influenced by Polykleitos. A further trait that distinguishes Alkamenes from Phidias is the frequent return to archaic forms, to be seen, for example, in the triple tier of curls on the brow and the treatment of the long hair on the *Hermes* and in the drapery of the triple *Hekate*, which falls below the girdle in perfectly symmetrical folds on either side of a larger central pleat. This return to archaic formulas may have been due in part to religious tradition, but it is equally probable that it reflected the artist's own taste, especially if the rigid attitude of the *Dionysos* on Athenian coins reproduces that of the original statue. Even in these works, however, the influence of Phidias is apparent. It is to be seen in the face of the *Hermes*, in the heads of *Hekate*, which in the Leiden example are so close to that of Prokne, and even in the fluid draperies of the upper parts of *Hekate's* three bodies.

By this fidelity to the master's teaching, combined with an attempt to add expressive elements of his own and to reconcile it with both earlier and contemporary currents, Alkamenes transmits the Phidian heritage to future generations.

SOURCES. Pliny, *Naturalis Historia*, XXXIV, 40, 72; XXXVI, 16, 17; Tzetzes, *Chiliades*, VIII, 340; Lucian, *Quomodo historia conscribenda sit*, 51; Hermotimus, 19; Quintilian, *Institutio oratoria*, XII, 11, 8; Suidas, s.v. (life); Pausanias, I, 24, 3 (Prokne); Pausanias, II, 30, 2 (Hekate); Pausanias, I, 20, 3; Harpokrates, see *En Limnoia Dionysos* (Dionysos); Pausanias, VIII, 9, 1 (Aaklepias); Cicero, *De natura deorum*, I, 30; Valerius Maximus, VIII, 11, 3 (Hephaistos); Pausanias, IX, 11, 6 (Athena and Herakles); Pausanias, I, 19, 2; Lucian, *Imagines*, 4 and 6 (Aphrodite); Pausanias, I, 8, 4 (Ares); Pausanias, I, 1, 5; X, 35, 2 (Hera); Pliny, *Naturalis Historia*, XXXIV, 72 (Athlete); Pausanias, V, 10, 8 (Olympia).

BIBLIOG. Overbeck, SO, nos. 808-28; Brunn, GGK, I, p. 234 ff.; C. Robert, RE, I, 1894, s.v., no. 5; Furtwängler, MW, p. 117 ff.; Collignon, SG, II, p. 114 ff.; Amelung, ThB, I, 1907, s.v.; H. Schrader, Phidias, Frankfurt, 1924, pp. 103, 184 ff., 263 ff.; C. Walston, *Alkamenes*, Cambridge, 1926; B. Schröder, *Alkamenes-Studien*, 79 Wpr., Berlin, 1927; H. Schrader, Die "Ersatzfiguren" im Westgiebel des Zeustempels zu Olympia, ÖJh, XXV, 1920, pp. 82-108; H. Bulle, Jdl, 1930 (abstr. AJA, Jan., 1941, pp. 106-107); Picard, II, 2, 1939, p. 551 ff.; V. H. Poulsen, Phidias und sein Kreis, Collections of the Ny Carlsberg Glyptotek, III, Copenhagen, 1942, pp. 72-8; S. Ferri, Plinio il Vecchio, Rome, 1946, p. 94; G. M. A. Richter, The Sculpture and Sculptors of the Greeks, New Haven, 1950, pp. 237-40; Lippold, GP, pp. 184-7; G. Becatti, Problemi Fidici, Milan-Florence, 1952, p. 191 ff.; E. Langlotz, Alkamenes-Probleme, 108 Wpr., Berlin, 1952; C. H. Morgan, Phidias and Olympia, Hesperia, Oct., 1952, pp. 295-339; G. Becatti, EAA, s.v.

Domenico MUSTILLI

Illustration: PL. 59.

ALLSTON, WASHINGTON. American painter, born in the District of Georgetown, S. C., in 1779. Allston attended Harvard College between 1796 and 1800 and, one year later, made the first of two long visits to Europe. In London (1801-03) he mastered the English technique of monochrome underpainting and superimposed glazes of color; in Paris (1803-04) and Rome (1804-08) he studied the old masters, especially the "gorgeous concert of colors" in the Venetians. His literary friendships, notably that of Coleridge, intensified the poetic, inward-turning habit of his mind and helped him in 1804 to achieve the turbulence of his *Rising of a Thunderstorm at Sea*, the horror and desolation of *The Deluge* (PL. 103). In the mood and manner of Claude and Poussin he assembled the groves and temples of ancient Italy in a *Classical Landscape* (ca. 1805), portraying nature not as objective fact but as the projection of his own visions. Larger and more ambitious figure compositions marked his second stay in Europe from 1811 to 1818; among them were *The Dead Man Revived by Touching the Bones of the Prophet Elisha* (1811-13), *Belshazzar's Feast* (begun in 1817), and *Uriel in the Sun* (1817). His *Elijah in the Desert* (1818) reminds one of the stark trees, rugged crags, and threatening skies of Salvatore Rosa, but its glowing color and vast spaces reveal Allston at his imaginative best. His remaining twenty-five years were spent in Boston and, after 1830, in Cambridgeport, where the aging artist became a venerated figure as he painted landscapes, made portraits of real and of "ideal" persons, and struggled with the pictorial problems of his *Belshazzar*, left unfinished when he died in 1843.

Overpraised by most of his contemporaries, Allston was shrewdly judged by Margaret Fuller when 47 of his works were shown in 1839. Moved by the dreamlike quality and the rich though somber color of his landscapes and idealized single figures, she observed that his larger dramatic compositions revealed "his appreciation of the stern and sublime thoughts he wants force to reproduce." Yet Allston was, in the words of Edgar P. Richardson, "the pioneer of an art of mood in America"; his draftsmanship and his coloristic technique were something new in his time; the authentic personal vision which created the *Moonlight Landscape* (1819) looked forward to Albert Ryder and Marsden Hartley; both his work and his spoken and written comments on art gave a new breadth and dignity to the profession of which he was the acknowledged leader. (See AMERICAS: ART SINCE COLUMBUS, col. 286 and PL. 103).

BIBLIOG. J. B. Flagg, Washington Allston, Life and Letters, New York, 1892 (useful but inaccurate); E. P. Richardson, Washington Allston, A Study of the Romantic Artist in America, Chicago, 1948 (a work of sound scholarship). For contrasting interpretations, see V. Barker, American Painting, New York, 1950, chap. 45, and J. T. Flexner, The Light of Distant Skies, New York, 1954, chaps. 9 and 12, and *passim*.

Oliver W. LARKIN

ALTAMIRA. See ARCHAEOLOGY; PREHISTORY; SPAIN.

ALTDORFER, ALBRECHT. Painter, draftsman, print maker, architect; one of the most important masters of the German Renaissance and the greatest artist of the so-called "School of the Danube" (see CRANACH, LUCAS). He contributed much to the evolution of landscape painting, which under him assumed unprecedented autonomy. Little is known about his life and activity (see SOURCES for a discussion of the pertinent documents). He was born about 1480, probably in Regensburg, and died there Feb. 12, 1538. Documents prove him to have been active from 1506. He lived mostly in Regensburg; presumably he traveled down the Danube to Vienna in 1511 and certainly he worked in this city in 1535.

WORKS. *a. Signed paintings*: *St. Francis Receiving the Stigmata*, 1507, Berlin, Staat. Mus. - *St. Jerome in Penitence*, 1507, Berlin, Staat. Mus. - *Nativity*, 1507, Bremen, Kunsthalle. - *Satyr Family*, 1507, Berlin, Staat. Mus. - *St. George and the Dragon*, 1510, Munich, Alte Pinakothek. - *Rest on the Flight into Egypt* (PL. 60), 1510, Berlin, Staat. Mus. - *St. John the Baptist and St. John the Evangelist*, n.d., about 1510, Regensburg-Stadtmuseum, Hospital of St. Catherine. - *Holy Family with St. John the Evangelist*, 1515, Vienna, Kunsth. Mus. - *Mourning of Christ*, n. d., ca. 1520, Cologne, H. Neuerberg Coll. - *Nativity* (PL. 61), n. d., ca. 1520-25, Vienna, Kunsth. Mus. - *Legend of St. Florian*, n. d., ca. 1520, 7 panels, perhaps originally 9 (PL. 62): Florence, Uffizi (2); Nuremberg, Germanisches Mus. (3); Melnik, Lobkowitz Coll. (1); Berlin, private coll. (1). - *Landscape with Bridge*, n. d., ca. 1520-25, Munich, Böhler Coll. - *Landscape of the Danube Valley*, n. d., ca. 1520-25, Munich, Alte Pinakothek. - *Madonna and Child in Glory*, n. d., ca. 1525, Munich, Alte Pinakothek. - *Departure of the Apostles*, n. d., ca. 1525, Berlin, Staat. Mus. - *Susanna at the Bath*, 1526, Munich, Alte Pinakothek. - *Crucifixion*, 1526, Nuremberg, Germanisches Mus. - *Crucifixion*, 1526, Berlin, Staat. Mus. - *The Battle of Alexander* (PL. 64) 1529, Munich, Alte Pinakothek. - *Madonna and Child*, 1531, Vienna, Kunsth. Mus. - *Landscape with a Proverb (Poverty and Riches)*, PL. 65), 1531, Berlin, Staat. Mus. *b. Attributed paintings*: *Martyrdom of St. Catherine*, ca. 1507, Vienna, Kunsth. Mus. - *Crucifixion* (PL. 67), ca. 1510-11, Kassel, Gemäldegalerie. - *Small Holy Night*, ca. 1512, Berlin, Staat. Mus. - *Altarpiece of St. Florian*, ca. 1518: 8 panels depicting the passion of Christ, 4 of the legend of St. Sebastian, 2 predella panels with the donor and female saints, Monastery of St. Florian near Enns, Upper Austria; 2 predella panels with the Entombment and Resurrection, Vienna, Kunsth. Mus. - *The Beautiful Mary*, ca. 1518, Regensburg, St. Johann. - *Christ Taking Leave of His Mother*, ca. 1520, London, Wernher Coll. - *Birth of the Virgin* (PL. 63), ca. 1521-25, Munich, Alte Pinakothek. - *Portrait of a Woman*, ca. 1521-25, Lugano, von Thyssen Coll. - *Adoration of the Magi*, ca. 1521-25, Frankfurt, Städ. Inst. - *Crucifixion*, ca. 1521-25, Budapest, Mus. - *Wings of a small altar*, ca. 1521-25: inner sides, *The Rule of Mars and Bacchus*; outer sides, *Adam and Eve*; Lugano, von Thyssen Coll. - *Large Holy Night*, ca. 1530-35, Berlin, Staat. Mus. - *Lot and His Daughters*, 1537, Vienna, Kunsth. Mus. *c. Doubtful*

paintings: *Resurrection*, Basel, Öffentliche Kunstsammlung. - *Madonna and Child*, in the Berlin market in 1932 (cf. Winkler, Pantheon X, 1932, p. 44). - *Madonna and Child*, Budapest, Mus. - *Nativity*, Chicago, Art Inst. (cf. Sweet, *Bull. Art Inst.*, XXXIV, 1940, 2). - *Visitation*, Cleveland, Mus. (cf. H. S. Francis, *Bull. Cleveland Mus.*, 37, 1950, p. 115). - *St. Jerome in Penitence*, Cologne, Wallraf-Richartz Mus. (cf. Buchner, *Wallraf-Richartz Jhb.*, N. S., I, 1930, 16). - *Altar from Church of the Minorites*, 1517, Regensburg, Städt. Mus. (probably not by Altdorfer). - Copy after Altdorfer: *The Beheading of St. John the Baptist*, Vienna, Kunsth. Mus. (cf. Buchner, 1938, no. 341). *d. Attributed frescoes*: Series of frescoes (now detached) from the imperial bath in the bishop's palace in Regensburg, ca. 1535: 22 fragments; Regensburg, Städt. Mus. (21); Budapest, Mus. (1). *e. Drawings* (PL. 66), cf. Winzinger, 1952, *Vollständiger Katalog*: Chiaroscuro drawings and pen drawings on single sheets, 1506-07. Borders for Kaiser Maximilian's *Missal*, 28 leaves, 1515 (later signed HD), Besançon, Bibliothèque Municipale. - Architectural studies from 1518 on. (The architectural drawings of Wolfegg, published by P. Halm, *Münchener Jhb.*, 1951, 127 ff., belong to the artistic environment of Bavaria, but should not be attributed to Altdorfer.) - Landscape miniatures. 1522. *f. Copper engravings* (cf. Voss, 1910): Single sheets, 1506-11. Renewed activity in this medium from 1520 on. *g. Etchings*: It is demonstrable that Altdorfer produced etchings from 1519. Series of landscape etchings, ca. 1522 (cf. Voss, 1910, pls. 31-36). *h. Woodcuts* (cf. Buchner, 1938, no. 258 ff.): Series of saints from the Monastery of Mondsee, dating apparently from before 1506, Vienna, Staatsbibl. - Single sheets from 1511 on. - Work for the Triumphal Arch of the Emperor Maximilian, ca. 1515. - Series of woodcuts on *Man's Fall and Redemption*, ca. 1515. - Single sheets until about 1530. (See IV, PL. 427.)

Altdorfer's antecedents are to be found in the art in the region of the Danubian Alps about 1500, whose leading exponents were Marx Reichlich and Mair von Landshut. Though his activity in this or that studio cannot be traced with certainty, he seems above all to be essentially indebted to Jörg Kölderer's studio in Innsbruck, especially for his concept of landscape, which from the beginning was to play an important part in Altdorfer's work. Together with the elder Cranach, Breu the Elder, and Huber he created the specific style of landscape painting which links together all the old masters of the so-called "Danubian School." As his early works have the precision of miniatures, it does not seem unreasonable to suppose that he was also trained in calligraphy and miniature painting, possibly by his father.

The first signed works, copper engravings and drawings, date back to 1506. They already display the characteristic personal style of the artist, even though he uses motifs from a variety of sources, principally from Italian *miniatures* and engravings from the circle of Jacopo dei Barbari and Dürer. His transformation of Dürer's ingredients is especially evident in his engraving of the *Temptation of the Hermits* (B 25), dated 1506. Whereas Dürer builds up his compositions from vividly precise details, Altdorfer starts out from the total conception, which takes its form only through the organization of dark and light areas. The individual appearance of the details holds little interest for him. The pictorial coordination within the picture space is of overriding importance.

For drawing Altdorfer preferred colored papers, on which he drew with black ink and white lead. From the colored ground, which takes on a spatial value, the luminous strokes of the brush tip emerge magically to create an atmosphere of enchantment. His favorite subjects were fantasies—for example, *The Witches' Sabbath* and the *Savages* (Winzinger, 1952, 2, 6, and 24). Even his religious scenes often have an exotic and fabulous quality, as in *St. Nicholas Stilling the Tempest* or the *Madonna and Child in a Wood* (Winzinger, 1952, 3 and 5).

Characteristically one of his earliest paintings is a *Satyr Family* in Berlin (1507), in which antique and classical elements are mingled with Nordic legends. The figures are positively embedded within the landscape; they owe their existence to the same powers as the natural vegetation. This incorporation of figures into landscape occurs also in the religious paintings of this period, for example in the companion panels of *St. Francis* and *St. Jerome* (1507) in Berlin. The figures can be traced back to early Cranach, but they exist within the context of a luxuriant vegetation. For Altdorfer, from the very beginning,

landscape becomes the decisive means of expression. In the little *St. George* in the Munich Alte Pinakothek it is the invading primordial forest that impresses upon the tiny scene of the saint and dragon a legendary and heroic breadth. The early pictures are painted in soft, subdued tones. Only with the *Rest on the Flight into Egypt* (PL. 60) in Berlin (1510) does a more vivid coloring begin to prevail. The strict organization of the areas restrains the abundance of detail in this cheerful narrative picture.

About 1510-11 Altdorfer began to employ a more monumental and heroic language, because he came increasingly under the influence of Cranach. This is especially noticeable in the *Crucifixion* in Kassel (PL. 67) and in the panel with *John the Evangelist and John the Baptist* in the Regensburg-Stadtamhof. The miniature handling and the idyllic atmosphere remain alive in the details, but the figures emerge large and dominant against the background of a freer and more flowing landscape.

To this time belong the first independent landscape drawings — the *Alpine Scene with Willows* and *The Danube at Sarmingstein* (1511; Winzinger, 1952, 28, 29) — and a rich production of woodcuts, all on single sheets with the exception of one cycle, *The Fall and Redemption of Man* (B 1-40), obviously inspired by Dürer's *Little Passion*. In the following years Altdorfer was recruited as a draftsman for the extensive graphic works commissioned by the Emperor Maximilian. He had a share both in the Triumphal Arch and in the Emperor's prayer-book (cf. most recently Winzinger, 1952). It is difficult to detect an organic development in the compositions of these prints, but in general an increasing control of the third dimension and a simplification in the arrangement of planes combines with a visible effort to make the figures independent of the landscape.

This development in Altdorfer's style during the second decade of the 16th century can be studied in the big altarpiece of St. Florian (*The Passion of Christ and The Legend of St. Sebastian*) which (contrary to Winzinger's dating of 1509 in ZfKw, 1950, 159 ff.) cannot have been executed much before 1518. In his creation of space, Altdorfer depends more than before on Pacher's devices, which he freely translates both pictorially and optically. His way of representing interiors seems also to have been inspired by Italian engravings of architectural interiors in the style of Bramante (cf. Winzinger, op. cit., 1950). In his altarpieces intense, pure colors stand out against cold, muted backgrounds, the whole being handled without the transitions of aerial perspective. The figures are shown in dramatic movement, an effect rarely before attempted by Altdorfer. The agitation and discontinuity of movements and drapery might be compared to Leinberger's sculpture.

Gradually the treatment of space becomes simpler and more clear, as in the *Legend of St. Florian* (PL. 62, beginning of the third decade), thanks to the use of more strongly contrasting colors. After 1518 the desire to perfect his representation of interior space is confirmed by some purely architectural drawings (Winzinger, 1952, 107-110). These sheets, mostly with church interiors, were often preliminary sketches for paintings, as for example the *Birth of the Virgin* (PL. 63, Munich, Alte Pinakothek). In the finished painting what is paramount is not the articulation of the architectural elements nor of the space enclosed by them, but rather the invention of a more or less fantastic interior, made even more unreal and poetic by the ring of fluttering angels. The most beautiful of these picturesque architectural fantasies is the palace which dominates the whole scene in the painting *Susanna at the Bath* (Munich), executed in 1526, the year of Altdorfer's appointment as city architect of Regensburg. The details of the airy loggia reveal an exact knowledge of Italian palace architecture — a knowledge acquired, however, from engravings and not from an Italian journey (H. Hildebrandt, *Die Architektur bei Altdorfer*, 1908). Some landscape etchings — closely connected with Huber's drawings — appeared in the first years of the third decade (B 66-74). In these the distant perspective is no longer glimpsed through a framework of foreground *repoussoirs*; it flows continuously, though the transition of receding planes still seems unassured.

Altdorfer's most important painting, *The Battle of Alexander* (PL. 64) of 1529 (Munich, Alte Pinakothek) was commissioned by Duke Wilhelm IV of Bavaria. This picture, with its thousands of minute horsemen and soldiers involved in a tumultuous struggle, displays at its height Altdorfer's capacity to organize an infinity of detail within an over-all visual unity. The personal fate of the individual combatants, whether Alexander or Darius, is of secondary importance compared to the wild agitation of the two armies within the immense, cosmic, fairy-tale landscape bathed in the mysterious light of the stars. Microcosm and macrocosm come together in this picture. The event is detached from history, from place, from time itself.

We possess but few pictures from the last decade of Altdorfer's life. The religious struggles of the time, which resulted in a decrease in the number of commissions, may have caused the artist to devote himself more closely to his duties as city councillor and architect. Some paintings of religious subjects still appear, such as the splendid *Adoration of the Magi* in Frankfurt (ca. 1525), the more Dürerlike *Madonna and Child* in Vienna (1531), and the large *Holy Night* in Berlin. Nevertheless, Altdorfer's originality is more evident in secular works, for example in the picture often called *Poverty and Riches*, Berlin (1531), which is his illustration of the German proverb "On the train of pride sits the beggar" (*Der Hoffart sitzt der Bettel auf der Schleppe*) in which figures, architecture, and landscape are merged in a way never before achieved in German art (PL. 65).

Altdorfer's evolution toward the worldly taste of the Renaissance may be seen in the fragments of frescoes in the Regensburg episcopal bath. On the walls he painted great architectures developed in logical perspective, with staircases and galleries in which nude or fashionably clothed figures move in the most natural manner (preliminary sketch in Florence, cf. P. Halm, in *JhbPreussKSammI* 1932, 207 ff.). The surviving fragments reveal a thoroughly organic, though already somewhat mannerist, treatment of the nude, and the increased emphasis on facial expressiveness by the accentuation of volumes brings Altdorfer's late style both formally and psychologically closer to Baldung. This is further confirmed by his last large painting of 1537, *Lot and His Daughters* (Vienna). The extreme realism of the objects and drapery is so unprecedented in Altdorfer's work that its attribution to him has been questioned (O. Benesch, "Altdorfer's Badstufenfresken und das Wiener Lothbild," *JhbPreussKSammI* 1930, 179 ff.), but in truth this picture should be seen as a last confirmation of the complexity and variety of the master.

SOURCES. J. D. Passavant gives the first data on Altdorfer's life based on documents in *Peintre-Graveur*, III-IV, 1862-63, p. 300 ff. C. W. Neumann, from a perusal of the Regensburg archives, establishes for the first time the basic facts of Altdorfer's life, in *Mayer's Allgemeines Künstlerlexikon*, I, Leipzig, 1872. W. Boll modifies some of Neumann's conclusions and publishes more fully important documents already used in part by the latter, in particular Altdorfer's will and inventory, in *Beiträge zu Albrecht Altdorfer*, *Münchner Jhb.*, 1933, p. xiii and also in *Albrecht Altdorfer's Nachlass*, *Münchner Jhb.*, 1938-39, p. 91 ff.

Altdorfer acquired the citizenship of Regensburg in 1505 (Gumpelshaimer, *Vorträge*, April, 1835). Customarily this could not occur before the age of 25, so this would set his latest possible birth date in 1480. His father has generally been identified with the painter Ulrich who left Regensburg in impoverished circumstances in 1491, having renounced his citizenship (Regensburg, *Stadtarchiv*, pub. by Boll in *Münchner Jhb.*, 1938-39). It can be assumed that both Albrecht Altdorfer and his sister and brother, Aurelia and Erhard, mentioned in his will (the latter became court painter to the Dukes of Schwerin in 1512) were born in Regensburg, for all three are named after saints especially honored in that city (M. Friedländer, 1891, p. 3). The Regensburg citizens' roll of 1505 describes Altdorfer as "painter of Amberg," though neither he nor his father can be traced there between 1491 and 1505 (Boll, op. cit. 1938-39, p. 91). Presumably this statement merely indicates Altdorfer's last temporary residence before his arrival in Regensburg, where he settled permanently in 1508 as a registered citizen. (Neumann, *Mayer's Allgemeines Künstlerlexikon*, I, Leipzig, 1872, p. 336). Until his death on Feb. 12, 1538 (Regensburg, *Stadtarchiv*, IA, s. 10, *Wappenbuch des Rats* Herrn Christoph Glockengießer, pub. by Boll, op. cit., 1933), Altdorfer lived in Regensburg as a prosperous and respected citizen, councillor, city architect, and painter. The great extent of his possessions can be seen from the inventory attached to his will (published in its entirety by Boll, op. cit., 1938-39, p. 97 ff.). The art objects listed there are of particular interest for the light they throw on Altdorfer's personality as an artist. He owned works by recognized masters and other pictures inventoried only by subject; he preserved in trunks and boxes

miniatures on parchment, drawings, and prints, also a picture by "Albrecht Iherer" (presumably Dürer) and a collection of "various old heathen coins," which must have consisted of antique coins, *mielli*, and small plaques.

We have a great deal of information on Altdorfer's activities as city councillor and architect. In 1519 he was mentioned as member of the city council for external affairs; in 1526 he was elected to the city council for internal affairs. In the same year he assumed the post of city architect, in which capacity he built in 1527 the city wine cellars and the slaughterhouse; in 1529 he worked on the city walls; and in 1535 he built the tower of the city hall (Neumann, op. cit., p. 537; the buildings are no longer extant).

In 1528 Altdorfer was especially active in the "Peace Tribunal." When, however, in the same year the city wished to elect him mayor, he begged to be excused on the grounds that he wanted to devote himself entirely to a certain painting (*The Battle of Alexander*), commissioned by Duke Wilhelm of Bavaria (Neumann, op. cit., p. 537). As city councillor, in 1533 Altdorfer had a hand in calling a Protestant minister to Regensburg (Neumann, op. cit.). His definitely favorable attitude toward the new religious movement of the Reformation, which is evidenced in his will by his renouncement of masses for his soul (cf. Boll, op. cit. 1938-39, p. 98, note 20), nevertheless did not prevent him from assuming in 1534 the position of overseer of the Augustine Cloister (Neumann, op. cit.). The only documented journey made by Altdorfer (1535) was on behalf of the city of Regensburg to the imperial court in Vienna (Regensburg, Stadtarchiv Ecl. 1, pub. by Boll, op. cit. 1938-39, p. 93, note 16). That Altdorfer made a journey along the Danube as early as 1511 is sufficiently confirmed by the drawing of Sarmingstein (Meder, *Mitteilungen der Gesellschaft für vervielfältigende Kunst, Beilage der graphischen Künste*, 1902, p. 9), but it remains uncertain whether on that occasion he traveled as far as Vienna.

The archives yield little information on Altdorfer's activity as a painter. This fact seems in part to be due to the "private" character of his smaller pictures, the majority of which he documented himself by signature and date, and in part to the prevalence of graphic work in his output. There is evidence for the following works for the city of Regensburg, all lost except for the coin design of 1512 and known to us only through documents: 1510, panel for the choir of Weih St. Peter (Gemeinsere Chronik von Regensburg, 1824); 1512, design for new gold coinage for the city of Regensburg (Munich, Hauptstaatsarchiv, cf. Buchner, *Albrecht Altdorfer und sein Kreis, Ausstellungskatalog*, 1938, nos. 778 and 779); 1515, commission for a panel for the Scheyern cloister (Aufzeichnungen des Weihbischofs Peter Kraft, *Reformationsgeschichtliche Studien und Texte*, VI, Münster, 1920); 1517, painting a curtain for a *Heiligtumstuhl* (a repository for relics and vestments) and painting armorial bearings on the city banner (Regensburg, Archiv des Historischen Vereins, Baurechnungen der Kirche der Schönen Maria, pub. by Boll, op. cit. 1938-39, p. 93, note 12); 1519-23, various works for the Church of the "Schöne Maria," erected on the site of a synagogue destroyed in 1510; illumination of a bull of indulgence, painting of banners, representation of a miracle, and other works. L. v. Baldass (Albrecht Altdorfer, 1941, p. 133) erroneously attempts to relate the pavement of 1522 for this last work to the miraculous image of the "schöne Maria" of Regensburg, Altdorfer's authorship of which was rediscovered by Buchner (op. cit., 1938, no. 34). Cf. to the contrary the documentary source: Regensburg, Archiv des Historischen Vereins, Baurechnungen der Kirche der Schönen Maria, pub. by Boll, op. cit., 1938-39, p. 93, note 12.

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Gisela and Karl NOEHLER

Illustrations: PLS. 60-67.

ALTICHIERO and AVANZO. Venetian painters of the Trecento. Altichiero was the son of a certain Domenico da Zevio. (Zevio is near Verona.) Documents refer to him in Verona in 1369, in Padua in 1379 (when he was paid for his work in the Chapel of S. Felice in S. Antonio), and again in 1384.

After the useful, if inconclusive, work of P. Schubring and A. Venturi, criticism of Altichiero took a step backward with Coletti, whose evaluation (which ignored the figural elements) threw into confusion the whole delicate matter of attributions. Toesca restored the discussion to a more equitable plane.

The fresco in the Cavalli Chapel in Verona and certain frescoes in the Chapel of S. Giacomo (now S. Felice) in S. Antonio in Padua (distinguishable critically from the rest of the series) together form the basis for all attributions to Altichiero. As for the Paduan frescoes, it is universally agreed that the *Crucifixion* (PL. 68) and the *Battle of Clavigo* are by Altichiero and that the other frescoes are by a different hand. The rounded forms, the ample folds of drapery, the unemphasized chiaroscuro constitute a striking novelty even where Tuscan work was well known. In the battle scene there is a sense of space and depth, an absence of Giottoesque scenic elements, which lend it a surprisingly progressive character, and its vastness is perfectly expressed within the picture limits. The towered city recedes schematically in planes and finally touches the upper edge of the painting—a frequent trick of Altichiero's which creates an impression of depth and monumentality. In the *Crucifixion* the skill of the composition reveals Tuscan origins. The arrangement of the crowded groups and the manner in which, in the more distant planes, they stand out against the horizon, thus defining a space almost Renaissance in feeling, reveal, as Berenson pointed out, a contact with the Orcagna school. But the coloring, with its pale gray, lilac, violet, rose-gray, white veiled with yellow, and pale water-green tones, is characteristic of the Po Valley painters, as may be seen later in some Lombard painting. The same color relationships are

seen again in S. Anastasia, where the Cavalli family is being presented to the Virgin (PL. 71).

In the noble chapel in Verona an easy space is maintained around the saints and knights, who are seen against a background drapery which brings out the balanced intervals of the arcades. The completely realistic interpretation does not preclude a rhythm of exceptional amplitude and solemnity which isolates and dignifies the figures.

But the fresco in Verona is broken by a tomb, which was placed in the wall about 1390. For this reason, and because of its close reference to Giotto, it seems to be earlier, as indicated above, than the frescoes of S. Giacomo. (The same is true of the *Coronation* on the Dotto Tomb in the Eremitani in Padua, which dates from ca. 1370.) It may be added that the destroyed Dotto fresco was commonly associated with Giusto de' Menabuoi.

However, the *Dream of Ramiro* and the *Crown Council* in S. Giacomo seem to be by another hand, because the painter of the lunettes, whom Schubring names "Maestro di S. Giacomo," is stylistically close to such Bolognese as Jacopo di Paolo and the master of the Moses stories in Mezzaratta, even though he also reveals contacts with Altichiero in the harmony of his groups, the breadth of his landscapes, the skill of his flowing narrative. The likeness between the *Beheading of St. James* in the Chapel of S. Giacomo and the *Decapitation of St. George* (PL. 69) in the chapel bearing the name of this saint is evident and implies a relationship between the two artists which is difficult to evaluate in the present state of our studies, unless one wishes to interpret their common characteristics as due to a single derivation. But if we do, the Tuscan elements in both find a simple, plausible explanation.

It is hard to see why we should not believe the notice according to which Bonifazio Lupi di Soragna is commissioned in 1384 to finish the Chapel of S. Giacomo in S. Antonio in Padua, which his brother Raimondo, who died in 1379, had caused to be erected. The fact that Raimondo in the votive picture in S. Giorgio appears last among the members of the family does not prove to a certainty that he was still living when the fresco was done; nor does it prove the contrary. In this second chapel Altichieresque characteristics may be found in a master who worked next to the historically documented Avanzo. Here in the *Crucifixion* the modeling in grays is so Lombard in character as to make one think of Borgognone. Though the color is quite different, based on almost complementary contrasts between variations of violet and lilac on the one hand and of opaque yellows on the other, shading to a varied sfumato (and to gray in the case of the Virgin), it seems certain that here we have Altichiero in a more advanced phase. The *Crucifixion* in S. Giorgio is among the most impressive treatments of the subject in the Trecento. The spirit of Altichiero appears clearly in the balance of the crowded scene. The eye is carried from the compact group of the Marys at the left and from the figures at the right to the horsemen, who close off the background so that only the crosses rise starkly into the blue. The *Coronation of the Virgin* in the lunette farthest back reveals the hand of Altichiero in the way in which the figures are isolated and in the rows of angels divided into carefully balanced groups.

In the two *Crucifixions* in Padua, the Veronese painter arrives at a harmonious and almost classic mastery of form all the more striking in view of the fact that it is precisely in these years that the first signs (here entirely absent) of the International Gothic style begin to appear.

In S. Giorgio to this same hand (that is, to Altichiero in a somewhat later phase) must be ascribed the *Decapitation of St. George* and the scenes from the *Infancy of Christ* on the interior of the façade walls, whereas the votive picture is from the hand of one or more followers.

The art of Altichiero appears in S. Giorgio to develop in a parallel sense with that of Avanzo. It does not seem to depend on it nor directly to influence it, but rather, it is as if the two predominant personalities, in the close intermingling of styles within the chapel, had both exerted an influence on the minor artists.

The first and at the same time the greatest difference between Altichiero and Avanzo lies in their treatment of the relation of figures to space. While with Avanzo the architecture seems to press in on the figures, blocking space and view, in Altichiero the highly objective perspective is rendered better perhaps even than in the Lorenzettis. It is the unusual treatment of space, above all, which permits us to see Altichiero in the *Nativity* and the *Adoration of the Shepherds*. The quality is not, naturally, that of the *Crucifixion* of S. Giacomo, but it is exactly for this reason that we can detect Altichiero here in a later moment (aided by assistants).

And for the same reason, only Altichiero is responsible for the original treatment of the *Beheading of St. Catherine* and (with assistants) of the *St. George Killing the Dragon*.

All this may not appear self-evident, because in S. Giorgio we have a close collaboration that does not favor analysis, a collaboration that is revealed even in a fresco such as the *Decapitation of St. George*, which, besides being a highly personal work, is one of the most moving dramatic compositions of the Trecento.

In the supreme harmony between the lowering mountains and the scene of the *Martyrdom* the soldiers form a barrier around the victim, and the lances, held straight, seem to push back the landscape, while the silent atmosphere of the scene is broken only by the incident of the father dragging along his small son. (But even in these last-mentioned figures there is an echo of the Avanzo of the *Funeral of St. Lucy*, PL. 72.)

In the *Martyrdom of St. George* the division of labor appears even more clearly; Avanzo in the left, Altichiero in the right-hand group. That the balanced play of these groups is unthinkable without Tuscan influence is everywhere evident. At the same time, in our opinion, those Emilian elements which, from Avanzo's contact with Tommaso da Modena, one might reasonably assume would be present are nowhere to be found. With Tommaso, as Schubring very well saw, he has nothing in common.

Avanzo was perhaps a Vicentine. The signature of the artist — Avancius or Avantis — is to be seen at the foot of the *Funeral of St. Lucy* in the Chapel of S. Giorgio, where he must have worked about 1380.

That the artist who has been confused, from the end of the 15th century on, with Jacopo degli Avanzi should be identified on the contrary with one Avancius de Sammo (?), a Vicentine concerning whom we have documents dating from 1379 to 1389, is highly likely. A work such as the *Funeral of St. Lucy* gives us a very clear idea of its author; a very Venetian taste for full-bodied color, a gravity contrasting with Altichiero's elegance, a liking for lively portraiture, for storytelling, for crowded scenes, a predilection for lacy architecture — these traits seem fully to characterize the artist whose color range, varied and powerful, is rich in pomegranate-reds, bistre, deep violets contrasting with whites and rose, grayish taupe, and striking blues and greens. These colors are quite different from the more muted colors of Altichiero.

In this and in other works Avanzo is seen to lack the formal elegance of Altichiero; in fact, he suggests Verona less than he does the eastern Veneto. This artist, who in his portraits seems to anticipate Gentile Bellini and in his elaborate renderings of Gothic architecture foretells the proximate arrival of Jacobello del Fiore and Giambono, is essentially a Venetian. Avanzo does not shrink from using a stocky, corpulent model whom we have every opportunity of seeing and studying in the *Funeral of St. Lucy*.

Thus it is possible to observe in S. Giorgio two opposite ways of treating the human figure. One of them — which can easily be seen in the *Story of St. Lucy* — can be identified with the historically known figure of Avanzo; the other is the nearest we have to the Altichiero of the *Crucifixion* of S. Giacomo. To the first of these personalities we must ascribe the conception and execution (in S. Giorgio) of the *Saint Drinking the Poison*, of the *Baptism of Sevio*, of the *St. Lucy before Her Judges* (here, however, with an assistant), of the *Miracle* (PL. 70) and the *Martyrdom of St. Lucy* (PL. 73). To a close follower of Avanzo, in our opinion, must be ascribed the *Martyrdom of*

St. George, the Destruction of the Idols (PL. 73), and the *Martyrdom of St. Catherine*.

A good deal has been said about Tommaso da Modena in connection with the formation of the style of Avanzo. The two artists have in common a particular taste for dense, full-bodied color and in addition a lively feeling for portraiture which is a Po Valley trait and, indeed, Venetian; but at the same time Tommaso is distinguishable by his tendency toward loosely knit groups of figures and by a taste for an undulating line, for exaggerated gestures, and for forced facial expressions, all of which elements are lacking in the placid, self-contained Avanzo. If, then, one subtracts from the compositions of the latter all that characteristic lacy architecture in which they abound, there is no question that we are left with figures which are in effect a Venetian rendering of a Giottesque formula, and these in turn are in the line of a tradition in which there is no place for the exaggerated contortions of the Bolognese.

In the *Miracle of St. Lucy* we see the inflated colored forms restlessly filling the picture, and the same tendency is discernible also in the *St. Lucy before Her Judges*, all of this last surely from the hand of Avanzo. In Altichiero we see the color muted and the forms relaxed by his predilection for a soft Lombard light. But Avanzo in comparison with him appears to have a well-defined, separate style, which in its turn gives us a foretaste of the great period of Venetian color.

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Illustrations: PLs. 68-73.

AMERICAN CULTURES. The art of the American Indian must unfortunately be discussed in the past tense, because its continued development has been impossible in the years since Europeans have dominated the American continents. As a result of the Conquest, the conquered cultures of Middle America and the Andes were systematically robbed of their precious materials, and the time and energy of their people were directed to the use of their conquerors. A century or two later the Indians of North America were driven from their ancient homes and their resources destroyed; and in the 19th century they were herded onto reservations, where, leading a dull life promising no future for them as a people, they could neither maintain an established art nor develop a new one.

Since knowledge of the cultural background of an art is important to an understanding of it, the principal students of Indian art have been anthropologists who have dealt with art as part of the total culture. Many of the collections now in ethnological museums were made in the course of anthropological studies and are displayed as cultural artifacts rather than as works of art. Only in recent years have artists and art critics and historians become interested in this great wealth of artistic achievement. In the presentation of American Indian art, the Museum of Modern Art in New York has led the way, both in exhibition and in publication.

Indian art is varied and mature, and its roots are in a variety of cultures at many levels of development. In keeping with the diversity of American Indian cultures, there is physically a wide range of expression of the Mongoloid type in the Americas as well as a number of languages. Many types of cultural, social, and economic life are found among the American Indians: hunters in the Arctic and in the Plains of North America and the pampas of South America; agricultural people in the deserts of the western United States and the tropical Amazon basin; nomads in the North American Plains; an urban society based on agriculture and housing large populations in well-planned communities in Central America and in the Andean zone. Some of these societies developed ritual, art, architecture, and the social and political control necessary to monumental building accomplishments. Nevertheless, the art of most of these groups remained a tribal art, with definitive styles. The artist worked within the range of these styles and usually showed his creative ability in manipulating them rather than in breaking with tradition. Unlike the artist of the modern world, he remained anonymous; in fact, objects that are today set forth as examples of Indian art may have been produced merely for personal or household use. Masks and other ceremonial regalia were made not as works of art but as appurtenances of a ritual performed for the good of the group or some part of it. Nevertheless, the importance of Indian art was not diminished by being expressed in useful or ritual objects. Many members of the tribe were good craftsmen; in fact, professional artists existed only in the more advanced cultures of Middle America and, to a lesser extent, on the Northwest Coast of North America. The participation of many members of the tribe in artistic activity gave rise to lively competition and competent criticism. Moreover, the close ties between religion and daily existence made art an essential and organic element of tribal life; art, often of a high level, was indispensable in that it served to express the conception of the supernatural world upon which the tribe's life depended.

Anthropologists have grouped the cultures of the American Indian into "culture areas," many of which have varied in extent in the course of their long histories. Generally, however, this classification has been satisfactory for the study of regional characteristics. This discussion will be based on such widely accepted areal delineations. Although art styles were to some extent diffused from one area to another, the basic styles are easily recognizable.

SUMMARY. South America (col. 230): *Preceramic period; Period I; Period II; Period III; Period IV; Period V; Period VI.* Central America (col. 233): *Maya; Mexico.* North America (col. 236): *The southwestern United States; The Far West; The Northwest Coast; The Great Plains; The Eastern Woodlands; The Arctic.*

SOUTH AMERICA. The cultures of South America form two fairly distinct groups. A strip of land running from north to south along the Pacific slope, following the Andes, whose center is the Peru of today, contains almost all the area of high civilization of South America (see ANDEAN PROTOHISTORY). The rest of the continent produced relatively amorphous cultures whose productions are of little esthetic interest (see SOUTH AMERICAN CULTURES). From Peru, art styles and techniques spread southward along the cordillera but did not extend far northward nor into the tropical Amazon forest to the east. Outside of Peru there were few focal centers that could be regarded as significant: a pottery center developed on the island of Marajó at the mouth of the Amazon, and at San Agustín

in upper Colombia a highly localized monumental stone sculpture appeared. The area from Venezuela and Guiana to Panama and beyond, where Central American influence undoubtedly was felt, and southward again to northern Peru, was advanced in metallurgy but less highly developed esthetically.

The art of Peru provides a key to South American art, for, although it lacked to some extent creative freedom and imagination, it is nevertheless of considerable quality, particularly in pottery, textiles, stone carving, and metallurgy. In these arts, if not in painting and sculpture, South American craftsmen were as competent as Mayan ones.

Since the advanced cultures of the continent were wiped out by the Spanish Conquest, which destroyed the religious and intellectual background of Indian art and eliminated the communal life necessary for the production of quantities of material, the art of South America is known almost exclusively through the work of archaeologists. In some remote areas a simple folk art based on the great work of the prehistoric periods still exists, but it is scarcely comparable. The development of Peruvian art as it has been determined by archaeologists will be discussed in the periods proposed by Bennett (*Ancient Arts of the Andes*, 1954, pp. 22-24).

Preceramic period. The cultural center was on the north coast and can be dated from 3000 to 1200 B.C. by radiocarbon tests. The excavations at the mouth of the Chicama Valley reveal that agriculture was developing and twined cotton fabrics were produced but no pottery. In this period occurred the long process of development that preceded the advanced civilization of the Andes. At the end of the preceramic period there was a sharp transition to a more complex culture, probably indicating the migration of another group into the area. Once this more elaborate culture was established, it developed in conjunction with that of other parts of Peru until the time of the Spanish Conquest.

Period I. The period between 1200 and 400 B.C. is called the "Cultist," or "Early Formative," period because of the strengthening of religious influence, which created the ceremonial centers. In two northern highland basins, Callejón de Huaylas and Cajamarca, there developed the local cultures of the highland ceremonial center of Chavín — Cupisnique, Early Ancón, and Early Supe. The outstanding artistic products of this culture are stone sculpture, pottery, objects carved in bone, goldwork, clay reliefs, and textiles.

The ceremonial center at Chavín appears to have been a place where pilgrims gathered, for no habitations have been found. The architecture was very impressive, and the stone carving was in the definitive Chavín style, showing the characteristic feline motif with a wide mouth band curved upward at either end, crossed fangs, rows of small squared teeth, a circular nose, oval eyes with a notch cut out on top, and curved whisker bands. There was little sculpture in the round except for a few animal and human heads and puma-shaped mortars. Flat carving appeared on wide and narrow steles and incised slabs used as cornices. Kroeber describes the style as possessed of grandeur, charged with strong feeling, and producing the effect of slow motion. The pottery of this period at Cupisnique is a highly polished dark ware, rarely painted; many of the jars had the stirrup spout.

Period II. The Late Formative, or Experimenter, period, from 400 B.C. to A.D. 400, was characterized by technological innovations in building materials and the construction of irrigation systems. New weaving techniques were developed, experimentation produced negative painting and oxidized firing in pottery, and new alloys were produced. The local centers were Salinar, Paracas, Chancay, Huarás, Chanapata, and Chiripa, each of which developed its own style. Salinar pottery reflected the Cupisnique to some extent in its stirrup-spout jars, modeled figures, and decoration by incision, appliqué, and positive brush painting in white on a red base. Hammered gold and carved bone spatulas showed some Chavín influence. Paracas Cavernas pottery was varied, with open

bowls and dishes decorated by modeling, incision, and areas of canary, green, red, and black. The designs were generally geometric, but some resembled the Chavín feline motif. Many textiles and some goldwork were produced in this period.

Period III. The "Age of the Mastercraftsmen," or the Regional Classic period, flourished in the central Andes from 400 to 1000. Peruvian art reached its highest development during this period and its most extreme regionalism. The best known of these regional cultures were Paracas Necropolis, Nazca, Mochica, and Recuay. The Mochica is the best known of the prehistoric cultures of the central Andes because of the quantity and the cultural implications of the archaeological remains. The modeled and painted pottery is artistically significant, and the "portrait" jars provide a description of the population. The construction of pyramids, the largest being the Huaca del Sol near Trujillo, required an organized labor force, and the burials reveal class distinctions and patterns of social and political organization that foreshadow the Inca empire. This art tends to be realistic rather than geometric, although an occasional feline motif recalls the Chavín influence.

While the Mochica culture produced exceptional pottery, the Paracas Necropolis revealed the advanced textile development of the period. Bodies were dressed for burial, and the head was covered with a turban ornamented with gold and feathers. Many graves contained matched sets of ponchos, shirts, and shawls with over-all polychrome embroidery in designs of stylized cats, demons, birds, and anthropomorphic figures arranged in repeated sequences. The designs of these textiles often recall the polychrome pottery of the Nazca. Neither the Paracas nor the Nazca culture produced great architectural monuments. The Nazca culture developed the techniques of over-all embroidery, brocade, warp-and-weft stripe, gauze, and painted cloth, as well as three-dimensional needle knitting to finish the textile. In pottery the early Nazca designs were realistic representations of birds and animals, the later motifs being stylized anthropomorphic monsters, feline creatures with elongated bodies, and human figures carrying jagged staffs. Judging from these remains, the Nazca culture centered about a religion emphasizing ancestor worship and burial.

The Recuay culture is known only in highland phases that produced both architectural monuments and pottery. Houses and temples were built of large stone slabs, and the lintels were carved in high relief with feline motifs, the bodies in profile and the faces front view. Seated figures were carved in the round. Some of the pottery was decorated with geometric designs; it was produced in many shapes, including jaguars with angular bodies and a projecting comblike fret on the head.

Period IV. The pan-Peruvian aspect of this era, extending from 1000 to 1300, resulted from the conquest of regional groups and the foundation of the Inca empire. It was dominated by the Tiahuanaco style, recognizable by its distinctive design, type of pottery, color scheme, and weaving pattern. In Bolivia, architecture in the Tiahuanaco style is typified by the stepped pyramid, Acapana, the largest of its kind, partly artificial, and faced with dressed stone. On the same site another large unit is associated with the famous monolithic stone "Gateway of the Sun" (PL. 169), with its finely carved lintel and its designs resembling textile patterns. The masonry in this unit is the finest in the central Andes, being cut in basalt and sandstone with such precision that it is fitted together without mortar. Tiahuanaco pottery is limited in number of shapes but includes vessels modeled to represent pumas and llamas and painted in polychrome. Pottery in Peruvian Tiahuanaco style is painted in black, white, and colors on an all-over red base in fine tapestry designs like the carving on the lintel of the Gateway of the Sun. Graves at Ancón and Pachacamac contain textiles in the same style. The transfer of these designs from one technique to another indicates complete mastery of the techniques. The swift spread of this culture was due to both religious diffusion and military invasion, and its decline was equally rapid.

Period V. This period, from 1300 to 1438, saw the decline of the Tiahuanaco culture and the rebirth of local styles. Craftsmanship was competent but uninspired. The local styles were Chancay, Chimú, and Ica. In the Chimú pottery there was a reemergence of the Mochica style, modified by the Tiahuanaco but lacking the realism and quality of the original Mochica. Great quantities of textiles were produced, including double cloth and tapestry, and feather mosaic was developed. Excellent metallurgists provided copper for knives and gold for goblets, breastplates, and ornaments. In ceramics the stirrup-spout jar was derived from the Mochica style, and the double whistling jar came from Tiahuanaco. Many characteristics of Chimú culture were to be present later in the Inca empire.

Period VI. The Inca empire from 1438 to 1532 was the greatest political organization in pre-Columbian America, extending its conquests south to Chile, east to the border of Argentina, and as far north as Nicoya in Costa Rica. Conquered areas were controlled by the maintenance of garrisons, the taking of hostages, and the removal of sacred objects to the Inca capital at Cuzco. The fixed, stratified society was based upon forced labor and a hierarchy of foremen. Although the Incas developed little that was new in either art style or techniques, they nevertheless created an impressive monumental architecture.

CENTRAL AMERICA. As a cultural area, Central America extends north of those limits prescribed by modern geographical conventions, according to which all modern Mexico to the west of the Isthmus of Tehuantepec is considered to be either part of North America or, by another definition, part of Middle America, which includes Central America. The civilization of the central provinces of Mexico has been generally considered to be typically Central American, as are even the northern provinces of the country, taking into account the areas of Central American influence toward the north and the age-old instability of their borders. These regions will here be viewed historically and artistically as separate regions in relation to those — strictly Central American in a geographic sense — in which the Mayan civilization flourished (Yucatán, Guatemala, and the bordering regions) and in relation to the local cultures of the Isthmus of Panama and the Antilles (see MIDDLE AMERICAN PROTOHISTORY). In order to provide a general framework, preliminary brief notes on the advanced protohistorical civilizations of the Mayan and Mexican areas are given here with an account of the most significant artistic phenomena of the Central American world.

Maya. Unlike the Incas and the Aztecs, whose cultures were destroyed by the Spanish Conquest, the Mayas had already gone through a period of disintegration before 1500. Their religious centers had been deserted and the power of their priests destroyed. Although their descendants still live in the same region, they are a simple farming folk, scarcely aware of the high artistic and intellectual achievements of their ancestors. While the Aztecs concentrated on pacifying their fearful gods, the Mayas created an astronomical and mathematical system by virtue of which they can be called the intellectuals of the New World.

As in Mexico, in Maya the most permanent achievement was the architecture, which is worthy of study not only in itself but also because it was an important medium for other arts. The Mayas built ceremonial and governmental centers surrounded by habitations in the manner of suburban developments. There were assemblages of public buildings, arranged around the sides of courts and plazas, in which religious ceremonies, governmental activities, and trading were carried on. There were identifiable styles for the various types of buildings: public buildings, temples, sanctuaries, palaces, pyramids, monasteries, ball courts, observatories, and dance platforms. These buildings had complex ground plans, and some had corbel-arched roofs. It has been suggested that the sharply pitched thatched hut roofs still used today may have been the prototype of corbel-arched stone buildings.

The oldest and largest city of the Mayas was Tikal, whose ceremonial center covered a square mile and included the

highest pyramid of the Mayas. Some of the finest wood carvings were door lintels, one of which, now in the British Museum, represents a territorial ruler on his throne with a superb rampant jaguar rising behind him. The stone carving at Tikal was not of high quality, but at Copán, the second largest city and the scientific center of the Old Empire, the hieroglyphic stairway proved the skill of the Mayas in this technique. The face of each step was carved with an individual glyph, and at the middle of every twelfth step was carved the heroic figure of a gorgeously dressed anthropomorphic being seated. Some shorter stairways had jaguars whose bodies were encrusted with disks of obsidian. Chichén Itzá, the metropolis of the New Empire, had two styles of architecture, the Mayan of



Distribution of the major American cultures.

the 6th to the 10th centuries and the Maya-Mexican of the 11th to the 14th centuries. The pyramid temples had columns with feathered-serpent decoration and were dedicated to the Feathered Serpent, the patron deity of Chichén Itzá, imported from Mexico. The true Mayan renaissance was expressed at Uxmal, where there was no Mexican influence. The most magnificent single building erected in pre-Columbian America was the Governor's Palace at Uxmal, in which the cutting and fitting of elaborate stone façades in mosaic patterns reached a high point of development. These patterns were geometric and, like the patterns of many of the stone carvings in other parts of Middle America, resembled those of textiles.

Mayan art, according to Brainerd (1954), can in the main be called a representational art, but its realism can be followed only if its complex conventions can be resolved by the viewer. This is especially true of the sculpture and carving, but in the art of painting the design has greater clarity because of the contrast of color. The most famous Mayan murals are at Bonampak, Chiapas; these realistic paintings reveal a great deal about Mayan life. They were done in fresco technique with ten mineral colors. The drawing was first cartooned and then

painted; finally, black outlining was added to the figures. No intentional shading was used to show surface modeling, but the scenes nevertheless showed lively action. Bodies were shown with almost unlimited freedom of posture, and the faces, although always in profile, showed a range of expressions. There is no linear perspective, but depth was attained by the superimposition of objects and in some cases by placing them on pyramid steps. The scenes show ceremonies, sacrifices, the robbing of priests, and even a battle. Painted scenes were also found on polychrome pottery in the northern foothills of the Guatemalan highlands. At Chichén Itzá also elaborate murals were found, but these showed Toltec influence (see below) and seem to have been designed by Mexican artists and perhaps executed by Mayan craftsmen.

The textile arts of this region are of special interest because weaving is still an active industry in Guatemala and some of the old designs are still used. The Mayas contributed to American Indian art largely in architecture and sculpture, however, and in these fields few cultures have risen to such heights in such a short period of time. Their achievements are comparable to those of the early civilizations of the Old World.

Mexico. The Aztec civilization, contemporary with the "mounds" and Pueblo cultures of the United States and with the "New Empire" period of the Maya civilization (ca. 1300-1519), was preceded in Mexico by numerous local cultures, concerning which we have documents dating from the beginning of the Christian era. The most ancient of these cultures, which developed slowly and lasted for several centuries, were located in the Valley of Mexico (El Arbolillo and Zacatenco for the most ancient period; Gualupita, Ticomán, and San Cuicuilco for the last phase). The remains consist of decorated pottery, rough clay figurines, and, from the last period, decorated earrings, pendants, and the first traces of wall building in the great adobe tomb of San Cuicuilco.

In the earliest phase of this transitional period there appeared in the area of Vera Cruz a highly sophisticated culture called Olmec, or La Venta, producing colossal statuary and finely carved masks and figurines. This culture belongs in the same period as the Chavín culture of the central Andes, with which it shares some "Cultist" aspects, such as the frequent occurrence of feline figures, jaguars with human features, and human beings disguised as jaguars. This culture had a marked effect on succeeding styles.

There followed the so-called Teotihuacán culture, which was at first simply the continuation of the final phase of the "transitional" cultures, but which soon produced a more elaborate pottery, modeled ear pendants, and other decorative objects. The carriers of this culture were the highly developed Toltecs, to whom tradition attributes the foundation of the advanced civilization of central Mexico. Archaeologists subdivide the remarkably uniform Teotihuacán culture into five periods covering more than five centuries (ca. 450 to ca. 1000), during which were developed a monumental architecture, the ritual use of figurines, and the technique of modeling. Contemporary with this culture was that of Monte Albán, attributed to the Zapotecs, who excelled in metalwork. In the fourth Teotihuacán period the incursions of the Chichimecs began, and the first period of Chichimec culture (950 to ca. 1100) coincided with the final phase of the Toltec civilization. The Chichimecs, whose capital was Texcoco, were the immediate predecessors of the Aztecs in the Valley of Mexico; during their hegemony (ca. 950-1300) the Mazapa and Coyotlatelco cultures developed, which produced remarkable pottery with tripod vases and modeled figurines. The last phase of the Chichimec coincided with the first period of the supremacy of the Aztecs, which lasted from 1300 until the Spanish Conquest.

According to George Vaillant (*The Aztecs of Mexico*, 1941, p. 155), "The Aztecs did not have a term for 'fine arts,' nor did they speculate about aesthetics nor make objects to be contemplated for their beauty alone. They had none of the socially sterile attitudes toward art which we adopt in our own culture. Instead, they recognized the value of superior workmanship and used its products to honor the gods, who were intermedi-

aries between man and the infinite power of the universe." The Aztecs produced significant architecture and sculpture but little important painting and drawing. Since the Conquest, which devastated the high civilization of Peru, also destroyed the motive power behind the arts of Mexico and we must rely on the archaeologist for data regarding the arts of both areas, it is fortunate that the Aztecs devoted so much of their artistic effort to the architecture of their religious buildings, making them sturdy enough to withstand time. The "Pyramid of the Sun" at Teotihuacán is an example of the grandeur of this art style as well as of the technical skill that created the illusion of infinite height and space. The Aztec preoccupation with death, not as an individual experience but as an abstraction, is shown in the frequent use of human skulls among other designs. The sculptors who produced this forbidding art achieved a monumental quality even in small, delicate pieces. Especially worthy of mention are the figures of the young gods and goddesses who presided over the crops, and the animal figures, which reveal close observation of nature.

The Aztecs also developed some of the lesser arts, for example, weaving, wood carving, and feather mosaic. None of the exquisite woven garments represented in the frescoes is still extant, but the interchange of patterns between textiles and stone carving is apparent in the delicate carving on the façades of buildings and exemplifies the great skill in the development of geometric designs which is apparent in the arts of many of the American Indians. Little remains of Aztec wood carving, but in the codices there are many illustrations showing the carver at work as well as some of his products in use. Among the most permanent works in wood were drums carved in the form of a single animal or decorated with bas-relief carving representing jaguars, eagles, and other figures with religious significance.

Feather mosaic, produced sporadically in the Americas (see FEATHERWORK), was a highly developed art among the Aztecs. One of the fine examples still in existence is the headdress of Montezuma (Vienna, Völkerkunde Mus.), which in structure resembles the war bonnet of the Plains Indians. Feathers of various colors were so carefully blended that the fabrics rival paintings. Feather cloaks and feather-decorated shields were made by tying the fine quills of the feathers into the fabric.

Knowledge of metallurgy, probably transmitted along the Pacific Coast to Panama and Costa Rica, arrived late in Mexico. Few gold pieces survived the Spanish looting, but the collection found in 1932 by Dr. Alfonso Caso in Oaxaca greatly increased our knowledge of the goldsmiths' skill. The necklaces, earplugs, rings, and small ornaments were decorated with figures ranging from realistic animal heads to ornate compositions of sacred figures.

Mexico also produced fine pottery, with many local styles. Special products of this region were pottery whistles and spindle whorls. The Tarascan style of clay modeling developed along informal representational lines unrestricted by the rigorous demands exercised nearer the great centers of development. Famous among Tarascan ceramic pieces are the small models of ballplayers and the fat little dogs.

Since the arts of the Aztecs were closely associated with their religion, the knowledge and practice of these arts was more widespread in this society than in many others. However, as a result of the rigid class distinctions characteristic of a theocratic society, fewer in the population shared the use of the finished products than took part in their production.

NORTH AMERICA. The southwestern United States. The indigenous art of this region, which consists of New Mexico and Arizona, is perhaps the best known of the United States (see NORTH AMERICAN CULTURES) first because it was early studied archaeologically and second because the Indian population continues in some measure its traditional life. The culture represented here once reached northward as far as the Great Salt Lake and southward across the border of Mexico into northern Chihuahua. Here the earliest remains of man in America have been found, with evidence of the longest unbroken culture sequences. The cultures of the area, both historic and prehistoric, are of three main types: the Anasazi ("ancient peo-

ple," in Navaho) culture on the high plateau, forerunner of the Pueblo culture; the Hohokam ("ancient people," in Pima) culture in the deserts around the Gila Valley; and the Mogollon in the mountains of southern New Mexico, which reached its height in the Mimbres Valley and Casas Grandes in Chihuahua, but has no true modern representative.

The Anasazi culture sequence, starting with the Basket Makers at the beginning of the Christian era, made no pottery but produced basketry with well-executed geometric designs as well as petroglyphs with large stylized figures of animals and possibly deities in Barrier Canyon, Utah. The Modified Basket Makers added more color to bolder and more mature designs and produced pottery as well, making their first pots in basket molds and painting them with geometric designs. It is still a question whether the art of pottery making was imported from Mexico or invented locally. After pottery production began, the culture went through two formative periods before the classic age of Pueblo culture began about 1050, when great structures such as Cliff House in Mesa Verde were built. The decoration of pottery with geometric designs reached a high level, and other arts, such as turquoise mosaic, were developed.

After this great period of artistic development, the villages were abandoned, for obscure reasons, during a great drought in the latter half of the 13th century. A parallel collapse of the great Toltec civilization of the central Mexican plateau took place about a century earlier.

The Pueblo IV period (1300-1700) was one of reorganization in which centers of habitation moved southward and art styles changed. In spite of the large Pueblo population and their many inhabited sites, archaeological studies have not yet revealed a consistent picture. Best known are Sikyatki and Awatobi in the Hopi area, where not only was a new style in pottery painting developed but also great murals were painted in bright colors on the walls of the *kivas*, or ceremonial chambers. Pottery was decorated with realistic representations of birds, reptiles, insects, and masked deities rather than geometric designs; large areas were left bare; and stippling was used as a background for the figures. Eccentric placement of the design in the shallow bowls was also characteristic of the period.

"Pueblo V" is the name given to contemporary Anasazi culture; although it dates back to 1700, it has had a certain continuity in spite of the many changes in the surrounding world because the Pueblo people have probably lived the most isolated and untouched lives of any American Indians. Their habitations are still characteristic terraced structures with flat roofs and ladders connecting the various stories. Commercial cloth is used for ordinary clothing, but many ceremonial garments are still woven of native cotton. The ceremonial year begins with the coming of the gods at the winter solstice in the form of the *hachinas*, impersonated by men of the village and represented in small figures painted and dressed like the dancers. The carving of these figures is elementary, and the painting is an accurate representation of the dancer's costume rather than an imaginative creation. The manufacture of pottery has continued with little change, and each modern pueblo has developed a recognizable style. The Zuni make large water jars painted with a combination of realistic figures surrounded by geometric motifs. The figure of the deer recurs, painted in X-ray style with the internal organs visible. The Sia potters use fine bird and plant design. With the introduction of silver by the Spanish, the Pueblo Indians, especially the Zuni and Hopi, became excellent jewelry makers, combining the new technique with their ancient work in turquoise mosaic.

Dry painting, done with colored sands on the floor of the ceremonial chamber during religious rituals, is another Pueblo technique. This was borrowed by the Navaho, who elaborated it as one of the major aspects of their curing rituals.

The Hohokam culture sequence presents a more interesting artistic history in its archaeological phases than in its modern periods. From its pioneer period (ca. 300), simple clay figurines, shell ornaments, and pottery with red-on-gray decoration have been found. In the classic period (900 to 1000) were created figurines that were realistic and well made and pottery vessels with supports, decorated in a wide range of designs from highly

stylized yet realistically conceived animals and insects to textile-like geometric motifs. Contact with Mexico was apparent in this period. From 1100 to 1400 this culture lost its best features artistically, but through the advent of a Pueblo group began a new style in polychrome ware. The modern representatives, the Pima, make relatively undistinguished black-on-red pottery and basketry that resembles Apache work; on the whole they cannot be rated as one of the art-producing cultures.

About 900 in the Mimbres Valley the Mogollon culture began to produce a new type of pottery decoration now known as "Mimbres boldface black-on-white." This style was influenced by the handsome Anasazi black-on-white designs, with their elegant spacing, and the free brushwork of the Hohokam. In a century this style matured, producing the well-executed, richly varied motifs of the classic Mimbres pottery. These pots, as found by archaeologists today, have a small hole broken into the bottom of each one; thus they were "killed" when buried with the dead. As the Mimbres style developed it added to the geometric patterns a series of naturalistic human and animal figures of an unusual liveliness and humor. The animals are so well drawn that a zoologist could easily identify them, yet the style is distinctive. Only in Casas Grandes in Chihuahua was there a continuation of this art into a period contemporaneous with Pueblo IV.

The remaining southwestern American Indian cultural group, the Navaho, are newcomers into the region. In the artistic life of the region they have contributed in three fields: textiles, sand painting, and silverwork. The elaborate Navaho blankets and rugs of today developed from the simple early-19th-century textile in brown and white largely because of the availability of dyes and dyed commercial yarns and the effort to please the traders.

Considering this great diversity of cultural detail, what binds this area of the Southwest together? One significant underlying force is the common myth of emergence from underground and the migration, which are seldom graphically shown in the art. Pottery, whether artistically valuable or not, has been present in almost all these cultures at some period of their history, and the development of agriculture in a semidesert land united these groups in a common struggle.

The Far West In dividing the North American continent into art areas, Covarrubias (*Eagle, Jaguar and Serpent*, 1954, p. 135) designates a region including the state of California, southern Oregon, and a large part of the Great Basin as the "Far West." The basis for this grouping is probably a negative one, for throughout this area, basketry is the only well-developed craft in historic times; and in prehistoric times there was only one additional craft, the strange, isolated art of soapstone, or steatite, carving in the region of the Channel Islands and the mainland opposite. The Indian tribes in this area were among the simplest on the continent, living as hunters and gatherers. Because of their mode of life, Douglas and d'Harnoncourt (*Indian Art in the United States*, 1941, p. 139) refer to these basket makers as the "Seed Gatherers of the Far West." Through their knowledge of food plants they became familiar with those that served as materials for their fine basketry. In northern California many baskets were made of redwood root and decorated with a grass known as *Nerophyllum tena*. To obtain fine black lines the midrib of the maidenhair fern was used, and for small touches of yellow, porcupine quills dyed with wolf moss. Many of the baskets were used for practical purposes. Some were realistically decorated and given local meanings, but many were so abstract that the original significance is no longer apparent. The Pomo introduced feathers, beads, and shells into the decoration of basketry. The feathers, woven into the basket itself, made a colored mosaic design. Such baskets were known as "jewel" or "gift" baskets and were given at weddings but never used. While the feather mosaic was most highly developed by the Pomo, some feather decorations were found in various parts of the San Joaquin Valley and in the Kern River and Tulare regions. In very few parts of America are individual Indian artists known by name, but among the Basket Makers of California there are several excep-

tions. Examples of the work of Mary Benson, a Pomo, and Datsolalce, a Washo, are displayed under their names in numerous museums, and authentic pieces of their work are collectors' items.

In the region of Santa Barbara and on the Channel Islands lived an extraordinary group of carvers — the Chumash, Gabriellino, and several other mission-named groups. They made jars of steatite, inlaid with shell beads, and finely carved figurines, mostly of fish and other marine forms. These carvings were probably characters in the mythology and religion of these people, for they did not seem to serve any utilitarian purpose. This carving was done before the white man invaded the area, and the pieces known today were found with very little evidence of their cultural setting.

The Northwest Coast. Along the Pacific Coast, in an area extending from northwestern California through south-eastern Alaska, flourished a culture based on the sea and the tree-covered mountains rising very nearly out of the sea. The Indians along this coast were primarily fishermen living in scattered villages that consisted of large communal houses built of cedar. The abundance of the food furnished by the sea and an inexhaustible supply of wood gave them both the leisure to develop a great art and the material with which to work. Like many other arts developed in America, this was mainly a utilitarian art. The humblest objects for daily use were decorated, and much time was devoted to ceremonial regalia.

Compared to the civilizations of Middle America or even of the Southwest, this culture was not old, and it is doubtful whether further work in archaeology will reveal greater antiquity. It lacked pottery, which provides a series of useful guideposts in establishing dates, and archaeological research is further hampered by the humid climate and the wet soil, which promote the disintegration of wood, bone, and shell, the principal materials. The oldest artistic products are stone sculptures and rock art which in some stylistic features foreshadow the wood carving of the historic period. The collections of late-18th and early-19th-century explorers, with archaeological evidence, establish the presence of a well-developed wood-carving art before the beginning of the 19th century, but the paucity of precontact archaeological remains leaves much of the culture unaccounted for.

The Northwest Coast artist worked principally in three-dimensional representation and developed the art of wood sculpture to a height not known elsewhere in North America. Many of his carvings were painted, and the complementary relationship between painting and carving was a subtle one. This becomes especially apparent in modern totem poles, in which painting is used to compensate for the inferior quality of the carving. Even when the Northwest Coast artist painted on a flat surface, his work retained a sculptural aspect.

The houses of the Northwest Coast were the most stable and elaborate examples of architecture in the United States north of the Pueblo area. The houses were oblong with either a gable roof or a roof with a single pitch. In the simpler house, the posts supporting the roof were painted or carved with designs derived from the religious experiences of the owner with his guardian spirit. Farther north the house fronts were often painted with designs related to the family crest. Another decorative feature was an entrance pole designed like a totem pole; one entered through the mouth of a figure near the base.

The art style of the Northwest Coast is basically representational, using both animal and human figures but often combining the two and exaggerating the traits of both. Some of the animals are mythical ones, such as the thunderbird and the sea bear. Although their characteristics are not fixed as in the style of heraldry, nevertheless each animal can be recognized by several traits. The beaver, for example, is characterized by his large incisors, the stick held between his paws, and his scaly tail, represented by a crosshatched surface.

Although in other parts of America Indian cultures were essentially democratic, the tribes of the Northwest Coast had a stratified society consisting of three classes: wealthy families, common people who depended upon them, and slaves, who were captured or traded from other tribes. A family's social

prestige might be of long standing, but it had to be maintained in certain conventional ways. A man of high status maintained his position by giving great feasts at which he distributed his accumulated wealth, not exactly as gifts, but rather as investments, for he expected the guest who received these goods to present him at some future time with at least the same amount plus a high rate of interest. In this way he constantly added to his capital. For these occasions he provided many fine feast dishes, spoons made of mountain-goat horns, ceremonial costumes for himself and his family, and dance regalia for the entertainment of his guests. These objects were decorated with motifs taken from his family legends, with which the artist had to be familiar. Since art usually draws upon religion for its inspiration, this custom is of interest.

The most nearly unique form of Northwest Coast art was the totem pole, which was erected to commemorate the dead or to display the wealth of a family. Family crests were arranged in a vertical column and carved on poles ranging up to 70 ft. in height. The best executed of these were made early in the 19th century by the Tsimshian, Haida, and Tlingit and later in the same century by the Kwakiutl. The composition of the pole depended upon the taste of the artist and the tradition of his tribe; thus the carvers of such poles were the closest approximation to the professional artist in North American cultures.

The art of the Northwest Coast area becomes increasingly elaborate as one goes northward, and an excellent example of this trend is the progressive elaboration of the rattles used in dancing, both by the medicine man and by other dancers. In northern Washington the rattle usually consisted of the simple figure of a bird, usually a shore bird, often painted in only one color. Farther north it represented the raven, showing a hawk on the raven's breast and sometimes a human figure and a frog on the raven's back. Among the Kwakiutl, the "healers" of the secret society carried round rattles carved in low relief with the figures of spirits associated with the society.

The wood carving was the exclusive art of the men of these tribes; women were believed incapable of creating in this style. However, the Chilcat women, who wove baskets and mats, were called upon to weave the beautiful Chilcat blanket with designs in the representational style of the wood carving. To assure the "purity" of the design, the men painted pattern boards for their wives' weaving. These blankets, woven with a warp of cedar bark and a weft of mountain-goat wool, were designed with a family crest arranged in an abstract presentation of a figure.

Among the Haida there developed in the 19th century an art that was not functional in their own culture but made to sell — sculpture in slate and argillite. The earliest figures done in this medium were elaborate panels that were supposed to be pipes, though they were seldom if ever used as such. The designs were taken both from the traditions of Northwest Coast art and from objects seen on the European ships whose crews bought the finished pieces. The small sculptures, of white men especially, plates, and platters of clipper-ship days have since been replaced by small totem poles in an effort to please the modern tourist.

The Northwest Coast artist was a keen observer of nature and translated what he saw into a representational art with roots deep in his cultural life. This art might have developed further had not European civilization devastated the cultural framework in which it still flourished as recently as the mid-19th century.

The Great Plains. The Indians living in this area have long been popularly regarded as typical of all American Indians. However, the culture of the Plains Indian as he was known historically, riding horses and using firearms, had changed drastically since the discovery of America. The prehistoric culture of the Plains was not known until extensive archaeological work done in the late 1920s revealed that these tribes had once been a settled agricultural people living much closer to the Eastern Woodlands. With the introduction of the horse and firearms they gradually became nomadic and moved into the Plains, where they abandoned agriculture, modified their

type of housing, ceased to produce pottery, and lived by hunting alone. The hunt, furthermore, provided the principal material for their art — skins used for tepee covers, robes, parkies, and clothing.

One of the oldest art styles in the Plains is the painting of skins, a device which these Indians shared with the Eastern Woodlands tribes with whom they had formerly been in close contact. The skin robes taken to Europe by the earliest explorers were painted in a geometric style represented more recently in the painted skin garments of the 19th-century Naskapi and the Plains Mandan tribes. In the historical Plains the painted robe in this style was also occasionally found, later followed by a representational art which told the story of the wearer's exploits in war or on the hunt. The explicit character of the paintings leads Boas to question their place in art and regard them rather as a primitive form of communication.

Meanwhile the geometric design style of the Plains was applied to other objects besides the skin painting already mentioned. Garments and moccasins were decorated with porcupine-quill embroidery, possibly one of the most ancient decorative arts in America. Through ethnographic data and museum specimens it is possible to trace the wide diffusion of this type of decoration from the interior Athabaskans of Alaska to the Central Algonkian, thus forming a base for certain geometric designs found on the basketry made by some of the tribes in this great sweep of territory. The range of design possible with these small, relatively inflexible units was limited, and the task of preparing the quills for use was difficult; thus the introduction of small glass beads, brought by the Europeans as fur trading flourished in the West in the early 19th century, created an opportunity for the greater development of this geometric art. Technical skill in handling this new medium developed rapidly, the Plains women, especially the Sioux, creating designs of great artistic merit. The best work of this type was produced from 1870 to 1890. Regional types of bead designs were created within the Plains area, and some designs had local meaning (e.g., the triangle represented a tepee), but generally the art was admired for its style rather than meaning. Some of the finest expressions of this art were the yoke patterns on women's dresses and the borders and central strips on skin blankets. Moccasins were also covered with beaded designs, and stripes of beadwork were applied to men's shirts and leggings.

Geometric designs were also painted on the parkies and rawhide boxes used by the nomads as containers for household goods. The designs were painted on the rawhide surface with pigments handled almost as crayons. Just as geometric bead designs are distributed in regional styles, so parkie designs also show by their distribution some of the historical cultural relationships of the Plains tribes.

As we have seen, pottery is absent in the modern Plains cultures and in fact before it was abandoned was strictly utilitarian, with little or no decoration. Basketry, also, exists only in a few tribes and does not add to their artistic achievements. Thus the Plains Indians have restricted their art to decoration of useful, portable objects.

The Eastern Woodlands. This area comprises almost the entire eastern part of the United States, coinciding with the heavily wooded eastern zone of the continent. It was occupied in historic times by two large linguistic groups in the north and many smaller groups in the south. It has been customary to divide this area into a region extending from Virginia northward through Canada to the borders of the Eskimo territory, and a southeastern area extending into Oklahoma or eastern Texas. This classification is based largely on the importance in the archaeological cultures throughout this region of three-dimensional design forms. The art was executed in stone, wood, and pottery as well as sheets of hammered copper, the treatment of which, though two-dimensional, had a three-dimensional aspect.

Covarrubias describes the sequence of cultures, their locations, and their characteristic products in *Eagle, Jaguar and Serpent* (1954, p. 245). The Late Archaic, or "Old Copper," period (ca. 1000 B.C.), with centers at Glacial Kame, Lauren-

tian, Lauderdale, and Early Signal Butte, had a remarkably developed copper industry and produced banner stones, gorgets, and conical pipes; the period called Burial Mound I (100 B.C.) was centered about present-day Adena, Ohio, and characterized by great mounds, fine pottery, textiles, and mica ornaments. These first two periods constitute what is called the "Woodland period." The Mississippi period was subdivided into Burial Mound II (500; centered about Hopewell and characterized by effigy mounds, unpainted ceremonial pottery, incised designs, small stone pipes, and hammered copper and mica silhouettes) and Temple Mound I (900-1400), with centers at Cahokia, Macon Plateau, Coles Creek, and Weeden Island I. Temple Mound I and Temple Mound II (1400-1700; centered at Spiro, Key Marco, Etowah, and Caddo) were characterized by mounds, substructures of temples, skulls as attributes of the "death" cult, solar disks, the motif of the weeping eye in the palm of a hand, fine pottery, stone carvings in the form of pipes, and shell carving.

The artistic development of the Eastern Woodlands tribes bears a slight resemblance to the history of art among the Eskimos in that some of the finest work occurred very early in their known history. The fine carving and the well-designed pottery is not known among any of the historical tribes, and the imaginative mound building ceased in historical times.

As archaeologists have excavated these remarkable examples of art forms that have been discontinued in historical times, the question of outside influence has been argued. Scattered over an area extending from New York west to Minnesota, south to Texas, and east to Florida are sporadic remains of an early archaic period, not described in the summary above, when the Indians made the so-called "gorgets" (rectangular stones with perforations) and banner stones (wing-shaped objects), but nothing that could be definitely classed as art. However, copper tools from the Late Archaic period were developed in Wisconsin and Minnesota, preceding the appearance of metallurgy in Middle America by 1,000 years. At the same time, in New England there sprang up a complex of extremely well-made ground-slate tools such as spear points and semilunar knives, perhaps indicating an outside influence from the Dorset type of Eskimo culture. Late in this period an eastern Asiatic trait appeared, namely, pottery with the surface designed by rolling it with a cord-wrapped mallet. These resemblances have been noted by scholars, but cultural connections across these great distances have not yet been proved.

In the early Woodland period another influence appeared from the south and persisted through the next millennium until its culmination in the period just before the discovery of America. It is still uncertain whether the technique of pottery making was a local development or was imported from Mexico, perhaps diffusing northward and there meeting the possible Asiatic influence already spread from the north. Incised, cord-marked, and textile-marked pottery has been found in Ohio, Illinois, and Georgia.

At the beginning of the Archaic period the great copper industry found in Minnesota and Wisconsin was limited to the making of tools, and artistic production was concentrated in the problematical banner stones, gorgets, and conical pipes. This was followed by the first Burial Mound period, remains of which are exemplified in the great Adena site in Ohio, where stone pipes were found, one of the finest examples being the modeled human figure declared by Covarrubias to resemble the art of the Olmec tradition of Mexico and also mentioned by Douglas and d'Harnoncourt for its similarity to Mexican work. In this period corded pottery with strong geometric designs was also plentiful. Following the Adena phase came the Hopewell, with its effigy mounds in the forms of serpents, birds, and other anthropomorphic figures, the true forms of which are shown only in aerial views. Delicate stone pipes carved in the forms of animals show the artist's intimate knowledge of realistic forms. Copper and mica silhouettes in the shapes of birds and animals as well as occasional geometric forms were probably applied to costumes as decoration. Effigy pottery, widely scattered in Tennessee and Arkansas, was made in the shapes of birds and animals. In the Mississippi period mounds

were no longer animal-shaped but had platforms on top and served as the substructures of temples. Another example of southern influence was the use of the "weeping eye" design mentioned earlier. Shell gorgets were more elaborately carved than before, with highly stylized designs of plumed serpents, birds, and other forms also pointing to Mexican influence.

In the northern region, the Woodlands people were perhaps best represented artistically by the masks of the Iroquois, which were generally based on the human face but so distorted with deep wrinkles and exaggerated features that it was sometimes difficult to recognize. Many had heavy, fleshy lips which were everted and extended horizontally. The masks were usually painted red or black or both and decorated above the forehead with horsehair. Of the lesser arts, the Eastern Woodlands Indians shared with the Plains Indians the art of decorating with beads; however, they did not develop the art on buckskin but rather on cloth obtained from the same traders who furnished the beads. The designs in this area were generally curvilinear and often floral in pattern. It is still not known whether the floral design is aboriginal or copied from designs brought by early French settlers. The presence of curvilinear designs in the more ancient work of these Indians in birch bark could support the claim for the indigenous character of the floral patterns. The designs on birch bark were produced by scraping away the white superficial layer of bark and revealing a brown background, which then became the design. Plant forms were used extensively in this art.

The living tradition of the people of the southeastern part of the United States had less opportunity to develop because they were moved from their aboriginal homes very early and as they were pushed westward met southern Plains tribes. Since little of their old art was carried with them, they adopted some of the crafts they found in their new surroundings. The fine tradition of the archaeological periods — the well-designed pottery, the beautifully carved shell disks — disappeared in the new circumstances.

The Arctic. The Eskimos, whose migration from Asia occurred later than that of the Indians, inhabit the Arctic shoreline of North America from southwestern Alaska (Bristol Bay) to Baffin Island (see *ESKIMO CULTURES*). In winter they live on the coast, and during the short summer they go inland to hunt caribou and gather the meager edible vegetation the tundra offers. Adaptation to a rigorous and difficult environment is one of the great achievements of the Eskimos, and their entire culture is designed to help in this never-ending struggle. In their travels they return to places they have already visited, but their stay in each place is temporary, depending on the presence of game. Consequently, the articles of their culture are small, portable, and utilitarian, and their art consists of carving and engraving on bone, walrus ivory, and occasionally driftwood.

From the study of archaeological sites in the Arctic three prehistoric periods can be distinguished, each with several local developments:

1. The Early Prehistoric period began with the Christian era and included four principal cultures: Old Bering Sea, Okvik, Ipiutak, and Dorset. Of these the least interesting artistically is Dorset, so named from the type site at Cap Dorset, Hudson Bay, but also represented in Greenland, the central Arctic, and the Aleutian Islands. The Old Bering Sea culture occurs sporadically in the American Arctic but is represented on the Alaskan Coast of the Bering Sea and on the adjacent islands. The art is extremely well developed for such an early period, but no formative period has been identified. The most characteristic objects of this culture are harpoon heads, handles, and winged pieces of unknown function. All are delicately engraved with flowing curvilinear designs and punctuated with nuclear circles and ellipses often raised to resemble eyes. The dot-and-circle design occurs frequently. The Okvik culture, which is found primarily on St. Lawrence Island, shares the early simple style of the Old Bering Sea culture. The Ipiutak site near Point Hope, Alaska, has revealed an amazing art, closely related to that of the Old Bering Sea culture; there are some burials with decorated skulls or masks

and many ivory objects. According to Covarrubias, both this and the Old Bering Sea style may have originated from a realistic art not yet discovered.

2. The Middle Prehistoric period began in A.D. 500. Eskimo art of this period is mainly represented by the Punuk culture, which is divided into Early Punuk, or Birnirk, a modified Old Bering Sea style, and Late, or Developed, Punuk. The fine curves of the true Old Bering Sea disappear, and sharp, stiff lines take their places; nucleated circles, formerly freehand, become compass-drawn. During this period the human figure is carved realistically in ivory and wood, as in modern Eskimo art. In various places the Punuk culture also produced a crude pottery decorated with curvilinear stamps.

3. The Late Prehistoric period began about 1000. It produced no change in the art style except greater stylization and a mechanical approach to design. No new styles were developed, and the sensitivity of the old styles declined.

The 19th and 20th centuries have brought many changes in Eskimo life, but their art has continued, still drawing to a certain extent on the Punuk period for style but also developing new forms of expression. The Alaskan Eskimos have become fine sculptors in ivory, making small figures of animals and human beings with a remarkable degree of selective realism. Although we have no very ancient examples because the materials of which they were made were not durable, the wooden masks produced today apparently carry on a tradition of ancient origin. Several centers of mask making have developed in Alaska, one on Nunivak Island and another in the region of Goodnews Bay. The masks are carved of driftwood and painted, with native colors, white, shades of red ranging from brown to pink, and blue, and decorated with feathers and caribou hair. Some are executed in an almost abstract style. Some masks have been found at Point Hope for which the present population has no explanation. They may be death masks or may have been used in dancing; they are very simple, forceful representations of human faces, done with great economy of carving and darkened with age but never painted beyond indications in black of facial tattooing. Very recently the eastern Eskimos of Baffin Island have begun carving soapstone figurines, not for their own use but for sale. The style has been strongly influenced by the Canadians who supervise the sales for the Eskimos.

The modern Eskimos have also elaborated their dishes and dippers, which have always been made of driftwood and scrub willow, into a painted form which is sold along with their modern carved ivory. These dishes have designs of monsters and other fantastic animals which usually show the internal organs as well as the external shape and again exhibit the imagination and humor of the modern Eskimo artist.

Carving and modeling is done by Eskimo men, and basketry and the sewing of skins by the women. The skin sewing produces a fur mosaic, since small squares and triangles of various kinds of fur are combined in designs. Basketry is especially well developed in the Aleutian Islands, where a native grass (*Elymus mollis*) is twined into small wallets, made exclusively for sale outside the culture, and openwork baskets decorated with the downy feathers of shore birds and dyed seal intestine, a style that has been found archaeologically in precontact sites.

For bibliography, see articles referred to in the text above.

Erna GUNTHER

Illustration: 1 fig. in text.

AMERICAS: ART SINCE COLUMBUS. The arts of the Americas emerge against two kinds of background and out of two distinct types of circumstance. The United States, Canada, and certain parts of Latin America (e.g., Brazil) present the picture of a gradual and painful conquest of a wilderness environment where art plays a minor role; in Central America (e.g., Mexico and Guatemala) and western South America the new civilizations are built upon a foundation of earlier and

highly developed Indian cultures such as the Aztec, Inca, and Maya. The Indians of the United States and Canada, found in a relatively primitive state by the conquering Europeans, provide an unimportant element in the later intellectual amalgam, but in Central and South America the overwhelming — and indeed the destroying — of native civilizations by the invaders did not in any way terminate the direct and indirect influences of those earlier peoples on the later arts of Latin America. Yet North American Indian art, however much less significant as a basic esthetic element, does emerge in modern times as an important stimulus to contemporary activity.

The countries of the Americas have in common certain factors that affect in many ways their respective cultural attitudes. First, there has been the conquest of the frontier, carrying with it that sense of constant movement into new, unexplored areas, whose feeling of challenge and accomplishment is still such an important element of American civilization, both North and South. One may perhaps suggest that this dynamic factor in the American background is directly related to the sense of individuality and independence that appears at various times in the history of the American peoples.

Second, we may consider the various cultural patterns emerging in the Americas as an amalgam of ideas imposed from the outside, usually from the mother country (e.g., England, France, Spain, or Portugal), and attitudes emerging from the local environment itself. The strength of these outside influences varies considerably in both quality and quantity as we move up and down the Americas. In the United States, and to a lesser degree in Canada, many more kinds of national strains (e.g., French, German, English) were involved in the historical development than in the lands to the south, though, as time went on, these varying strains became less distinctive in the arts, as in American life itself.

More specifically we have to consider the degree to which the artistic stimuli from abroad overwhelm the indigenous product and the degree to which outside influences prove beneficial or harmful. The painting of Eakins in the United States, the churches of 18th-century Mexico and Brazil, and the painting of 20th-century United States and Cuba each present separate and interesting reactions to the European tradition. In many cases, such as those just noted, the American product may be far more vigorous than its European prototype; in others the American artist is overcome by the traditional source.

From the beginning, United States artists, because of their early separation from the mother countries and the general pioneering situation, showed an independence of spirit and an originality that were very striking, while their contemporaries in Latin America were still tied to the apron strings of Spain and Portugal. Eventually, however, after the Latin-American countries had finally broken away from the retarding influence of their older connections abroad, they achieved a new and more autochthonous quality in their art, taking from Europe only what they could readily assimilate and, like their North American associates, ultimately offering the Old World in the 20th century a number of new and significant art forms.

This has been particularly true in architecture: North American leadership developed gradually in the last quarter of the 19th century and the first quarter of the 20th, whereas Latin America's rise to world status has come only during the second quarter of the 20th century. In the fields of painting and sculpture also a preeminent position has been achieved by North America, a position comparable with that of earlier European schools.

There are, then, not only three different kinds of art to be found in the Americas — indigenous, colonial, and national — but also the various admixtures of these three basic types, which are perhaps the most characteristic of all the products of the New World.

As we have already indicated, the distinctive and mature art of the United States owes far less to the original inhabitants than has been the case in Latin America. The southern nations have found a real strength in local traditions largely unavailable to the artists of the United States. At the same time the nations to the south have been slower in their rejection

tion of the colonial viewpoint than the United States. There is, therefore, a special interest in noting these different responses to situations that have large elements of parallelism as well as notable elements of divergence.

SUMMARY. I. Art of the United States (col. 246): Architecture (col. 246): a. *The 17th and 18th centuries*; b. *Romantic classicism*; c. *The Second Empire and the High Victorian Gothic, The skyscraper*; d. *Two 20th-century currents: Wright and the traditionalists*; e. *1930 to the mid-20th century*. Painting: (col. 277): a. *1492 to 1775*; b. *1775 to 1865*; c. *1865 to the Armory Show*; d. *The Armory Show to the mid-20th century*. Sculpture (col. 313): a. *From the 18th century to the Armory Show*; b. *1913 to the mid-20th century*; c. *Folk sculpture*. The decorative arts (col. 325): a. *1625 to 1850*; b. *The craft arts from 1850 to the mid-20th century*; c. *Machine technology*. II. Art of Canada (col. 331): *The French colonial period (1608–1760)*; *The English colonial period (1749–1867)*; *The Confederation period (1867–1900)*; *The early 20th century (1900–13)*; *1913 to the mid-20th century*. III. Latin-American art since the Conquest (col. 334): Mexico: a. *The plateresque style*; b. *Mexican baroque*; c. *The Churrigueresque style*; *The highlands of South America*; Brazil; *The 19th century*; *The 20th century*.

I. ART OF THE UNITED STATES. ARCHITECTURE. In the three centuries and a half since the settlement of Jamestown, Va., the world status of American architecture — understood in the special sense of the architecture of the United States and the precedent colonies — has changed enormously. Almost nothing links the humble wooden dwellings built in the 17th century at a remote fringe of the Western world with the vast edifices of steel construction that 20th-century American architects have built on several continents — nothing, except that both are examples of framed structure and that utility rather than monumentality is their principal aim. Although the colonial period came to an end politically with the Revolution of 1776, a colonial sort of cultural dependence on Europe lasted for another century. Even when American architecture came of age in the 1890s, autochthonous developments were balanced, if not distorted, by imported stylistic ideals; even in the mid-20th century the modern architecture exported so extensively by America still owed much to Europeans.

The earlier stages of American development, occurring at the periphery of the Western world, do not have much interest for foreigners. For Americans, however, ancestral piety makes every relic of colonial days an architectural treasure. Nevertheless, the extant remains do not support the contention that there was any very basic difference between colonial production and that of the homelands; allowance must be made, however, for a lag of more than a hundred years behind European "high style" in the first half of the 17th century and, except for Jefferson and Latrobe, of about a generation at the end of the 18th century. The 17th-century buildings illustrated in Plate 74 would none of them be out of place in the English rural scene and, at a comparable economic level, might not necessarily be even at a much earlier date. The layout of the early settlements, however, seems to have followed that of such Elizabethan "plantations" as Londonderry in Ireland rather than that tradition in English villages.

The roots of the American colonies and the new nation that grew out of them were not solely British, though American architectural development after 1800 would have been little different had this actually been the case. While the 16th and 17th centuries saw settlements within the later boundaries of the United States by several other European nations, the main line of American architecture descends quite definitely from the English colonies established early in the 17th century in Virginia and in Massachusetts. The early architecture of the Southwest, some of it of great intrinsic interest, belongs to the Spanish-American world, and had no long-continuing succession even in those areas. The contributions of Dutch, Swedish, German, and French settlers elsewhere were even more localized, both geographically and chronologically. Except for the introduction by the Swedes in Delaware of the frontier cabin of horizontal log construction, non-British settlers played but a very minor role in the development of generic American building traditions.

The succession of periods in American architecture can therefore be more closely correlated with the periods of English architecture than with those of Europe in general; but owing to the lag in transmission of high culture from the homeland to the remote transatlantic frontier—a lag found equally in other colonial situations—the periods never coincide very closely in time. Through the 17th and even the 18th centuries, moreover, phases that had great significance in England had little or no true reflection in America. Thus the original settlement coincided very closely with the introduction by Inigo Jones (q.v.) of academic Renaissance architecture in England. However, that major mode of English 17th-century architecture—whose wide acceptance was, even in the homeland, delayed until the 1660s by the country's civil war—hardly influenced American building before the last years of the century, and in so dilute and provincial a form as to be barely recognizable. In early 18th-century America two waves of Anglo-Palladianism, the Jonesian and the later Burlingtonian, seem actually to have merged. Yet for social, economic, and religious reasons the great bulk of colonial production in the 17th century, at least as we know it from extant examples, is not properly to be considered Elizabethan or Jacobean, except in a few very minor details or ornamentation. Rather it must be considered still late medieval—in English terms, Tudor—since it derived almost entirely from yeoman and artisan building practices common in England as early as the 15th century.

a. The 17th and 18th centuries. The once-popular evolutionary picture of the growth of the 17th-century American house from a one-cell unit to a double one and then to a three-room or five-room complex has given way to the presumption, based partly on literary evidence and partly on a more scrupulous dating of extant edifices, that there were, almost from the first, dwellings of various sizes, from the one-room, story-and-a-half cottage to something closely approaching the smaller English manor house. But with very few exceptions, all those that survive are quite small. They are usually two-storied in New England, whether of one-room or two-room plan, but mostly of only a story-and-a-half in Virginia and Maryland. In those colonies they were perhaps more consistently two-roomed in plan and certainly more frequently built of brick.

There is little apparent development before the 1680s. If anything, because of their greater elaboration of mass, the later houses were more medieval in appearance than those built half a century earlier. Simple cottages of one- or two-room plan, a story-and-a-half or two stories tall, and built entirely of one material, whether wood or brick, naturally had very few positive features of design. The traditional English frame construction of the wooden houses was consistently sheathed externally with lapped weatherboarding rather than exposed in the fashion called "half-timbering." This practice was largely restricted to the southeastern counties in England, and even there it was more common in the 18th century than the 17th. Roofs, at first of thatch but later of wooden shingles, rose in a single rather steep gable, usually at right angles to the front of the house. But in Jamestown, Va., and perhaps in other closely built towns, some gables faced the street, as on most houses in contemporary London. As soon as glass became available the windows were provided with leaded casements, almost always with diamond panes; but windows still remained very few and small. In the North a single chimney, often of complex "pilastered" plan and with a sort of cornice at the top, dominated one-room and two-room houses alike. In the brick houses of Virginia two chimneys rose at or just outside the end walls, and through passages often took the place of the diminutive stair lobbies inside the entrances of early New England houses.

The Capen house in Topsfield, Mass., and the Warburton house in Surry County, Va., although both of the last quarter of the century, illustrate better than any extant remains of presumptively earlier date the character, respectively, of Northern and of Southern houses (PL. 74). Of the features which would perhaps not have been present in earlier New England houses, the relatively large size and the oblong panes of the windows

in the Capen house are the most important. In the Warburton house it is the regularity, approaching symmetry, of the façade and the fine quality of the brickwork that suggest the late 17th-century date. Evidence from other houses makes it possible further to differentiate more generically the characteristics of the period 1610–60 from the later 17th-century period when these two houses were built.

In the second half of the century cross gables and projecting enclosed "porches," with porch chambers above them, certainly became numerous both in the North and in the South, while in New England new houses were often provided from the first with a lean-to on the rear. Earlier, these had been added to existing houses in order to extend their accommodations. It would seem that the morphological development from simple to complex that has been suggested as accounting for early colonial building production as a whole was often true of individual houses, enlarged from one-room to five-room size, perhaps in several stages, as the century wore on. The ubiquitous overhangs at the front and ends of the later 17th-century houses, with or without such additional features as cross gables and projecting porches, have a particularly medieval air, but the bulbous pendants and simple brackets with which they are ornamented recall, somewhat remotely, the detailing of Jacobean furniture rather than of Tudor architecture.

The core of the house in Dedham, Mass., that Jonathan Fairbanks probably built in 1637 is doubtless the best-preserved example of a New England house of the first half of the century. But it is seen today as characteristically extended by later wings to left and right and by the lean-to on the rear. The Fairbanks house, being unrestored, is extremely picturesque in appearance, its exterior lines softened by the sagging of the heavy timber frame. But this picturesqueness is probably as foreign to the intentions of Jonathan Fairbanks as that of classical ruins to their original builders; in detail, the early 17th-century image is distorted by the later sash in the windows and the character of the later clapboarding. Even with its bigger windows and its overhangs, pendants, and brackets, the Capen house, of more than a generation later, better illustrates what most 17th-century New England houses probably looked like. It should be noted that the door of the Capen house is not in the center, nor are the windows symmetrically disposed, for in early two-room houses one room was always wider than the other and there was evidently no interest in achieving axial balance.

More elaborate and picturesque houses, such as the so-called "Seven Gables" house in Salem, Mass., or the Whipple house in Ipswich, Mass., are the result of additions made within the 17th century to houses little different, when first built, from the Capen house. But the present cross gables on the latter are actually the product of a second restoration carried out only in the 1950s. The Warburton house near Jamestown is probably of about the same date as the Capen house. But its brick construction, story-and-a-half height, and end-chimneys are as typical of 17th-century Virginia and Maryland as the Capen house is of New England. Excavation has revealed at Jamestown, Va., houses of a more urban character, with party walls and one room set behind another. These were presumably two and a half stories tall and had gable ends facing the street, as has been noted already.

Bacon's Castle, in Virginia (PL. 74), dating from the third quarter of the century, is something of an exception. Unusually large, at least among the surviving houses, its scalloped end gables are specifically Jacobean; but its separated chimney stacks are still Tudor, unique in colonial America. In plan it has a cruciform over-all shape, with a projecting two-story feature, the "porch," on the front and at the rear a stair tower. A "screens passage" runs through the middle, and the room sizes are so adjusted that the façade is symmetrical. A misunderstood pedimental feature of brick evidently capped the doorway. The windows have projecting brick frames. But the scalloped gable and the elaborate chimney stacks are the most notable features of this house, and it was probably not nearly so exceptional in the 17th-century South as it appears today.

Leaving aside forts and blockhouses, generally constructed of palisading, the most important nondomestic structures of

the 17th century were erected for religious and communal uses. Anglican Virginia built churches, separatist New England what are properly called "meetinghouses." The one extant Southern church of this period, the Old Brick Church (now also called St. Luke's) near Smithfield, Va., probably dates from 1632 (PL. 74). Its oblong body of brick, with stepped gables front and rear and simple molded brick tracery in the window arches, might well have been built in one of the eastern counties of England. It must not be forgotten, however, that for more than a century after the Reformation there had been very few new churches built in England. Yet the tower of the Smithfield church reflects in a very modest way influences that are post-medieval; it is hard to be more specific. The plain, round arch at the entrance and the crude pedimental shape above the door, without being particularly Jacobean, are certainly not Gothic. The quoins and the topmost stage were added only in the last quarter of the century.

The New England meetinghouse was the most original architectural contribution of the early colonial period. The separatists desired to avoid ecclesiastical forms associated with the established church in England. They had — at least in the case of the Plymouth settlers — direct knowledge of the drastic alterations carried out by the Dutch in the interiors of most of their medieval churches to adapt them for Protestant use (they had themselves used the Pieterskerk in Leiden). So there could be no question of carrying to the New World familiar late-medieval English forms in the way that was done so consistently for domestic buildings. Indeed, structurally, and in terms of their exterior treatment, meetinghouses differed very little from dwellings. This was natural and perhaps even intentional on the part of these dissenters, who in England had been accustomed to holding their meetings not in consecrated but in secular buildings used also for various other communal activities. In plan, these edifices were elongated squares, with the focal point the high pulpit opposite the entrance in one of the long walls. The principal visual interest — as can be seen in the one surviving example, the "Old Ship" of 1681 in Hingham, Mass. — was the open wooden roof overhead. The meetinghouse type, established early, lasted beyond the end of the colonial period and has affected much later American church design.

How soon galleries were introduced is not altogether clear, but by the 18th century most meetinghouses — often used in the North and the South alike for Anglican as well as for Congregational parishes — had galleries across what may be called the "west" side and along the ends. The "Old Ship" now has such galleries added on either side of the original structure and dating from the 18th century. The exterior was unfortunately subjected to a crude restoration more than a generation ago and has now no plausibility at all. Even in the interior, below the splendid shiplike timbering of the great original roof, the 17th-century character is modified by a pulpit, box pews, and galleries from the 18th century. The St. Paul's meetinghouse in Wickford, R.I., built in 1706 for an Anglican parish, offers ample evidence of its date in the segmental-pedimented doorway of the "west" front and the round-arched windows below the gallery. It suggests more clearly than the "Old Ship" the external near-identity of colonial meetinghouses with ordinary houses of the same period. From the outside few would guess that this was an ecclesiastical edifice and not a rather elaborate house; and in the interior the communion table is tucked away under the gallery at the "south" end like an afterthought.

The change in phase that came at the end of the 17th century, a change that can be considered in the broadest terms to have been from late medieval to baroque, is associated with the establishment of several new cities: Philadelphia in the middle colonies, Annapolis in Maryland, and Williamsburg in Virginia. Well-established colonial cities such as Boston remained — and to a considerable extent still remain today — chaotically medieval in their planning. But Thomas Holme's original plan of 1682 for Philadelphia was soon extended by the Quaker leader, William Penn, in a regular grid all the way from the Delaware River to the Schuylkill River. The grid

was, moreover, provided with a central square and four subsidiary squares. Thus the orderly planning introduced by Inigo Jones in London's Covent Garden Piazza of 1631 was extended to cover an entire community in a way that Sir Christopher Wren (q.v.) and others attempted in vain in London itself after the great fire of 1666. The plan of Williamsburg was very much less extensive and also less ironclad; but thanks to modern restoration, it provides the best extant image of a later colonial town. The slightly earlier plan of Annapolis, with its radial streets, was presumably inspired by Wren's plan for London.

The so-called "Wren Building" of William and Mary College at Williamsburg, begun in 1695, whether or not based on an original design by Wren, was certainly one of the earliest examples of the late Stuart mode usually associated with the English architect's name. The extant building was erected, after a fire of 1705, over the years 1709–16. It has been completely restored after many vicissitudes. Symmetrical, regular, with a plain arched entrance and a rather steeply peaked central pediment, this is a very modest, if relatively large, example of the Anglicized Renaissance introduced in England by Jones early in the 17th century. The rather more elaborate Capitol of 1699–1705, reconstructed in the 20th century, reflected similar ideals, as did the no longer extant New York City Hall of the same date, and the Philadelphia Courthouse of 1709.

The Governor's Palace at Williamsburg, begun in 1706, is a more modest domestic version of the same thing (like the Capitol, it exists only in a 20th-century reconstruction). But this house type, probably first introduced at this time, was two rooms deep with a two-story façade broken by five symmetrically disposed openings above and below, and with a relatively high hip roof above a modest cornice; it remained for more than a century basic to American architecture. Often mislabeled Georgian, although established, even in America, before the first George came to the English throne, this paradigm is illustrated, with various modifications of detail, in most of the best-preserved 18th-century mansions (PL. 77). The characteristic 18th-century plan of such houses, not yet fully developed in the Governor's Palace, had a central stair hall and four corner rooms; it seems indeed to have come to acceptance only rather gradually during the first quarter of the century; but it maintained itself, with minor variations, well into the 19th century.

By the 1720s churches built in the larger colonial cities followed quite advanced English models (PLS. 75, 76). Christ Church in Boston, designed in 1723 by William Price, a print seller, is actually a modest version of Wren's St. Andrew's, Holborn, in London. Characteristically, Richard Munday, an unkeeper turned builder, simplified the Boston variant still further with his Trinity Church of 1725–26 at Newport, R.I. (PL. 76); it is, for example, of wood where the Boston church is of brick. The much more monumental Christ Church in Philadelphia, designed by Dr. John Kearsley and built in 1727–44, emulates the almost contemporary English churches of James Gibbs (q.v.). (The very Gibbsian steeple, however, was added by Robert Smith only in 1752–54). Gibbs's *Book of Architecture* (1728) offered in its plates the models that were used for almost a century, as for example, by the Scotsman Thomas McBean in St. Paul's Chapel in New York of 1764–66 (with spire and portico of 1794–96) and by Joseph Brown in the First Baptist Meetinghouse of 1774–75 in Providence, R.I.

Many meetinghouses were still being built, but the more considerable of the ecclesiastical edifices were now truly churches; even meetinghouses often had a simplified tower and spire on one of the short ends. The Doric-porticoed St. Michael's Church of 1751–53, in Charleston, S.C. (PL. 75), is the most impressive of the mid-century. But for its stucco coating it might well have been built in England, and has even been somewhat implausibly attributed to Gibbs himself. However, it is rather more likely to have been by Peter Harrison (1716–75) of Newport, R.I. Among the most notable and elegantly finished edifices is certainly Harrison's Touro Synagogue (PL. 75) in Newport. Harrison also built King's Chapel in Boston and Christ Church in Cambridge, Mass., two of the

most distinguished Northern churches of the mid-century. His model for the synagogue was evidently Jones's Whitehall Banqueting Hall (PL. II, 147), but his detail was judiciously compiled from various later English books by Gibbs, Langley, and Kent, with which his own library was well provided.

A few mansions of the second quarter of the century were much larger and richer than the standard type of so-called Georgian colonial house, which is well represented in quite an early Northern example by the McPhedris-Warner house of 1718-23 in Portsmouth, N.H. (PL. 77).

Public buildings for secular use did not differ much from mansions, except for their greater size. Munday's brick Colony House of 1739 in Newport (PL. 76) follows the stone Hancock house in Boston of 1737-40 almost as closely as his Trinity Church (PL. 76) does the Boston Christ Church. The Old State House in Boston, as rebuilt in 1748, is chiefly notable for the rich treatment of the gable end, with its carved scrolls and armorial supporters, which is at the head of State Street.

With the increase in sophistication characteristic of the mid-century came a decrease in autochthonous quality, although the farther one goes from the eastern seaports, the more an almost peasant-baroque gusto in detail survived. This was true almost to the end of the colonial period, as for example in the boldly scrolled and broken pediments of houses along the Connecticut River, which hardly had their rivals in England even a century earlier. In short, one must recognize several different degrees of lag in colonial architecture, the lag of the large cities and the great plantations behind English "high style" and the lag of the colonial hinterland — often but 50 or 100 miles inland — behind the seaboard.

The influence of the second, or Burlingtonian, wave of English Palladianism took about a generation to become effective in the colonies. The earliest example seems to be Drayton Hall (1738), near Charleston, S.C., with a two-story portico and a definitely Palladian plan. Mount Airy (PL. 77) in Richmond County, Va., is later (1758-62) and, although very Palladian in spirit, was actually based on a design in Gibbs's *Book of Architecture*. A decade earlier than Mount Airy, Harrison's Redwood Library of 1748 in Newport, R.I., with its correct Doric portico at the front and its rear façade based on the rear of Lord Burlington's own Chiswick House, would still have been fairly notable at that mid-century date in England.

Curiously enough, the Palladianism of such men as Harrison and the young Virginian Thomas Jefferson (q.v.) was not widely accepted before the Revolution. In the more sophisticated areas porticoes make a more than occasional appearance — in two stories on the Brewton house in Charleston in the mid-1760s, and with a giant order at Whitehall in Ann Arundel County, Maryland, in 1764-65, for example. But, as has already been noted, the most exuberantly baroque doorways were being executed up and down the Connecticut River Valley in the 1750s and 1760s with no regard whatever for academic correctness. Moreover, George Washington at Mount Vernon, Va., in the 1750s and others both in the South and North often emulated such features as fireplaces of a markedly rococo order from the plates of Abraham Swan's *British Architect* (1745), a work so popular that a pirated edition was published in Philadelphia in 1775 (the first American architectural imprint).

The period of the Revolutionary War, extending from 1776 to 1783, brought a general hiatus in building activity but had no permanent effect in cutting off the flow of architectural influence from the homeland. The style of the brothers Adam (q.v.), barely reflected in America in the mid-seventies, became in the mid-eighties the principal source of inspiration and lasted for at least a generation. As interpreted by such American authors of *Builder's Guides* as Asher Benjamin (see below), it lasted considerably longer in the new territories beyond the Alleghenies. But there was also some French influence in the last two decades of the century, largely owing to activities of *émigrés* who came to America after the French Revolution — though they rarely stayed for long. A French engineer, P.-C. L'Enfant (1754-1825), provided in 1792 the plan for Washington, the new Federal capital; but he left before it was laid out.

More significant in the long run than either the influence of Adam or contemporary France was the close association of the leaders of taste in the new republic with the international classical revival. When the capital of Virginia was moved after the Revolution from Williamsburg to Richmond, Jefferson, inspired by the Maison Carrée at Nîmes and assisted by C.-L. Clérissieu (1722-1820) — who never came to America, however — designed the new Capitol there as a Roman temple (PL. 78). Executed over the years 1785-96, this is the first instance anywhere of so drastic an acceptance of a particular ancient paradigm, and one that was destined to be enormously popular throughout the Western world in the first half of the 19th century. Nowhere was it more popular, moreover, than in the United States.

b. Romantic classicism. The competitions of 1792 for the Capitol and the President's house (White House) in Washington produced nothing so advanced. The competition for the White House was won by the Irish architect James Hoban (ca. 1762-1831). His design goes back, via Leinster House in Dublin, to Thornhill's Moor Park at the beginning of 18th-century Anglo-Palladianism. The original project for the Capitol by William Thornton (1759-1828) was no more up-to-date stylistically (PL. 79); much modified in execution over the years to 1828, it was later overshadowed by the vast dome and the side wings added by Thomas U. Walter (1804-87) in the 1850s and 1860s.

The classical revival matured only in the hands of Benjamin H. Latrobe (q.v.), the first thoroughly trained professional architect to settle in the United States. Beginning his American employment by assisting Jefferson to complete the Richmond Capitol (PL. 78), this English pupil of S. P. Cockerell made his first mark with the Bank of Pennsylvania in Philadelphia, begun in 1798. Although provided like Jefferson's Capitol with Ionic temple porticoes, the classical paradigm was not followed so slavishly; the square middle section of the oblong block rose higher than the ends and was capped with a shallow dome that was perhaps inspired by Soane's vaults at the Bank of England. Latrobe was a romantic-classical architect of great personal distinction, completely at home in the international form-world of his generation. As a result his Cathedral of the Assumption in Baltimore (PL. 81), begun in 1805, is one of the finest of all neoclassical churches, the first masterpiece of American architecture. It is unhappily the only major work of Latrobe which still exists, but there are also certain interiors of his in the Federal Capitol, mostly executed in 1812-17.

It is of interest that in 1798 Latrobe used Gothic detail on Sedgely, a house he built outside Philadelphia, at the same time that he was introducing the Greek type of Ionic capital on his bank in Philadelphia. He also offered an alternative Gothic design for the Cathedral at Baltimore, but one can well understand Bishop Carroll's preference for that which was chosen for execution. The planning of the central octagon recalls Wren's treatment of the crossing of St. Paul's in London, but it may well be maintained that Latrobe's solution of the geometric problems involved is more elegant. His segmental arches and plain surfaces suggest Soane again; yet the final result, except perhaps for the Ionic-porticoed west front (the towers above do not follow his original design), has a very personal character.

Latrobe's contemporary, Charles Bulfinch (q.v.) of Boston, had no such formal training, although he ceased to be an amateur with the building of the Massachusetts State House in Boston (designed in 1787-88, built in 1795-98). But the influences are there, on the exterior (PL. 78), from Sir Robert Chambers and, on the interior, from Robert Adam, James Wyatt, and perhaps Henry Holland. He remained faithful to an Americanized Adam mode well into the second decade of the 19th century, turning to the grander forms of the classical revival in designing his Massachusetts General Hospital in Boston only just before his call to Washington in 1817 to take over from Latrobe supervision of the completion of the Capitol. Yet if the general composition of the State House in Boston is obviously derived from that of the central block of Cham-

bers' Somerset House in London, designed during the 1770s, the delicate scale and the choice of pink brick, white woodwork, and — although the gilding was actually a later emendation — golden dome are extremely fortunate and almost as personal as Latrobe's use a little later of the grander mode of the classical revival.

Latrobe and Bulfinch were the masters of the first generation of American-trained professionals; their pupils dominated the urban scene through most of the first half of the 19th century.

The characteristic architectural mode of the years 1820-50 was the Greek revival, of which Latrobe's pupils William Strickland (1788-1854) and Robert Mills (1781-1855) were the national leaders. Bulfinch's one-time assistant Alexander Parris (1780-1852) and, in a special sense, the Greenfield carpenter and author Asher Benjamin (1773-1845) were, however, the leaders in New England and throughout the territories to the west, where Benjamin's later compilations of Grecian detail were used. But the influence of Benjamin's earlier books, offering carpenters a modification of Bulfinch's Adamesque suited to rural American conditions, long preceded and even rivaled this. Indeed, he provided Grecian models for the first time only in 1827.

Eventually the Greek revival, internationally but a phase of romantic classicism, became almost a national style in the United States. The rigid paradigm of the ancient temple, first followed by Jefferson in his Virginia State Capitol, was the preferred model for public buildings. In one of the pavilions at the University of Virginia (PL. 80), beside his library modeled on the Roman Pantheon, Jefferson in 1819 adopted at the suggestion of Latrobe the prostyle Greek temple as a model for domestic architecture. This new type of house design spread rapidly northward, southward, and westward in succeeding decades. Architects, on the whole, would probably have preferred to avoid so confining a framework of design, but clients everywhere demanded it. In the South an unimpeded peripetral version was increasingly popular down into the fifties; and even later than that in the West carpenters often provided much simplified versions with naively elementary detailing.

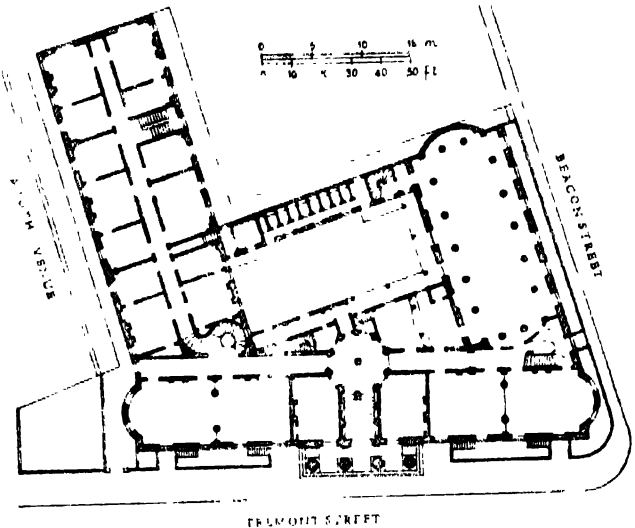
Although houses surrounded by colonnades, such as Oak Alley near La Vacherie in Louisiana of 1837 (PL. 81), were especially characteristic of the new South and remained popular down to the Civil War, pedimented temple houses were built in even greater numbers in the North, both in the countryside and in close-built towns. Commercial and even industrial buildings were designed very simply with a minimum of detail, a real respect for the fine materials used — often hard red brick or even granite, although houses were more usually of white-painted wood — and a most appropriate regularity of composition and mechanical perfection of finish.

The Washington buildings of Mills, appointed government architect in 1836, represent the most grandiose of Grecian works (PL. 79). His most conspicuous production, however, was a giant obelisk, the Washington Monument in Washington (designed in 1833, built in 1848-84), largest of the many Egyptian shafts that were erected all over the Western world in the period of romantic classicism. The Tremont House (PL. 80, FIG. 254) in Boston, built by Isaiah Rogers (1800-69) in 1828-29 and described the following year in a monograph, set new standards for hotel planning which the rest of the world gradually accepted. Strickland's Merchants' Exchange (PL. 80) of 1832-34 in Philadelphia well illustrates his considerable ingenuity in the combination of familiar Grecian elements.

With the decline of the Greek revival, America lost the relative homogeneity of style that had hitherto controlled almost all buildings — as much, admittedly, for technical and economic as for esthetic reasons. After that, rival stylisms long shared the forefront of contemporary attention. Some major technical developments arose almost independently of architects. Americans, as a result, have looked back for a generation and more on the Greek revival as an architectural "silver age," less sentimentally appealing than the colonial periods, yet notable for the consistency and harmony of the approach of architects and clients alike to all sorts of building problems. It is characteristic that Latrobe, and after him Strickland and Mills, often under-

took major engineering works, while Parris is more to be praised for the "skeleton" granite construction he introduced in 1823 in North and South Market Streets in Boston than for his St. Paul's Church, which in 1819 brought the Greek temple model to New England.

By the thirties, however, countercurrents were already rising, and advanced critics in the East began to condemn the unsuitability of Grecian forms for many of the types of structure to which they were currently being applied. The full force of the picturesque, arriving rather belatedly from England, was



Isaiah Rogers plan of Tremont House, 1828-29, Boston (from Eliot, *A Description of the Tremont House*)

not felt until the forties — or in the West a decade or more later — but by the mid-century a variety of alternative modes vied with the Grecian and had even superseded it for many purposes. Gothic forms long continued to be used with Georgian nonchalance, especially for domestic work. But in church architecture, particularly for Episcopalians, a more archaeological sort of Gothic revival, derived from the Puginian and Camdenian Gothic of the period in England, began with the building of Trinity Church in New York (PL. 82) in 1839-46 by Richard Upjohn (1802-78), this may be compared not unfavorably with A. W. N. Pugin's (q.v.) first important work, St. Marie's, Derby, of 1838-39, in the plausibility of its reuse of English perpendicular forms. James Renwick (1818-95) in New York, John Notman (1810-65) in Philadelphia, and Frank Wills (b. 1827) — who reached the United States from England via Canada — were Upjohn's rivals in the forties and fifties in such work.

Few architects were exclusive in their devotion to Gothic, however. Already in 1836, Notman had introduced the asymmetrically towered Italian-villa mode in a house for Bishop Doane in Burlington, N.J., and even Upjohn frequently employed this for secular work and for non-Anglican churches. Notman also introduced the palatial Italian of Sir Charles Barry (q.v.) in the Philadelphia Athenaeum of 1845-47, and while Ammi B. Young (1800-74) was government architect (1852-62) in succession to Mills, this became for the time the established mode for Federal government buildings.

The increasing eclecticism of the pre-Civil War decades encouraged other kinds of derivative design as well. A sort of Romanesque not unrelated to the contemporary *Rundbogenstil* of Germany was widely exploited by foreign-born and native-born architects alike — Leopold Eidlitz (1823-1908) from Prague, for example, and Thomas A. Tefft (1826-59) of Rhode Island. Eidlitz, on occasion, also built houses that were modeled on Swiss chalets.

Tefft's Union Station in Providence, begun in 1848 and long since destroyed, and Eidlitz's extant Willoughby Villa of 1854 in Newport, R.I., are perhaps the best examples of these

two modes. Tefft's station is more a tribute to the architect's precocious individual talent — he was equally capable in a Barresque vein — than to his native origin.

European references were broadening considerably from the almost exclusively English sources of the colonial period, but the increasing cosmopolitanism of taste achieved results that were curiously adolescent or *arriviste* compared to the mature assurance of the immediately preceding Greek revival. Yet the characteristic use of wood generally favored a delicate and even brittle scale that was unmistakably American. A. J. Downing (1815–52), the most influential critic of the period, explicitly encouraged direct expression of the sticklike qualities of American wooden construction and finish, especially in modest domestic work, as well as propagandizing only too effectively the imported Tudor and Italianate modes of the picturesque.

c. *The Second Empire and the High Victorian Gothic. The skyscraper.* The aftermath of the financial crash of 1857 followed by the Civil War of 1861–64 was responsible for a considerable hiatus in building production after the mid-century. In the boom that followed the Civil War, lasting down to the financial crash of 1873, two types of design dominated the American architectural scene. Already in the fifties the influence of Second Empire Paris had arrived, initiated by the Danish-born and French-trained Detlef Lienau (1818–87) in the Shiff house he built in New York in 1850. By the early sixties a full-blown mansard mode, pompous and pavilioned, had been acclimated in the work of Renwick in New York and of Arthur Gilman (1821–82) in Boston. This became dominant after the Civil War for many sorts of buildings, from such a major Washington edifice as the old State, War, and Navy Building, designed in 1871 by the government architect A. B. Mullet (1834–90) with Gilman as consultant, to one of the two first skyscrapers, the 1873–75 Western Union Building (PL. 82) in New York by George B. Post (1837–1913); it was used extensively for houses as well.

Renwick's Main Building for Vassar College outside Poughkeepsie, N.Y., was, by the wish of the founder, modeled in 1860 on the Tuileries, but crudely executed in red brick. Bryant & Gilman's Boston City Hall of 1862–65 was of white granite but curiously cold and heavy in execution. Federal government buildings such as that for the Departments of State, War, and the Navy or the big city post offices, notably in New York, mostly designed in the late sixties and completed in the seventies, best illustrate the rather brash grandeur of which the mode was capable in American hands when executed in fine granite.

Rivaling the Second Empire mode in popularity, and increasingly used for churches and for education buildings (also, of course, for houses) was the High Victorian Gothic. This was introduced from England in the late fifties by Edward Potter (1831–1904) of New York and Robert R. Ware (1832–1915) of Boston. Even the French-trained Richard M. Hunt (1827–95), the first American to study at the Ecole des Beaux-Arts in Paris, employed it on occasion.

At first, the bold polychromy of William Butterfield and the coarse forms of the "low school" of High Victorian Gothic architects in England were emulated with considerable timidity. Neither Potter's Library at Union College, Schenectady, N.Y., begun in 1857, nor Ware's chapel of 1859 for the Episcopal Theological Seminary in Cambridge, Mass., rival English work of the period. But by the early seventies all restraint had been thrown aside. For all their gaucherie, such edifices as Potter's Harvard Church of 1873–75 in Brookline, Mass., with polychromy largely of brownstone and green serpentine, or Ware & Van Brunt's towered Union Station of 1875–77 at Worcester, Mass., have an assurance rivaling that of all but the best English work of the fifties and sixties. Indeed, in the Philadelphia buildings of Frank Furness (1839–1912), the Academy of Art of 1872–76, and even more notably his Provident Life and Trust Building (PL. 82) of 1879, there is an originality of design and a giantism of scale unmatched abroad.

Such was the architectural scene when H. H. Richardson (q.v.), the next American architect of the first rank after Latrobe

and the second to study at the Ecole des Beaux-Arts, made his debut in the late sixties. It was also the stylistic situation when in the seventies American developments in two different fields, the tall commercial building and the detached moderate-sized house, took over the lead from England. Richardson made important contributions to both developments, but it will be well first to sketch his career as a whole.

Despite his French training, Richardson formed his personal style largely on the work of the advanced English architects of the sixties, notably William Burges, E. W. Godwin, and Norman Shaw (q.v.); their influence was apparent in some of his major works of the early seventies, such as the State Hospital in Buffalo, N.Y., and the Hampden County Courthouse in Springfield, Mass. His rather finer contemporary Brattle Square Church in Boston was more independent of English influence, however, and seems related rather to Emile Vaudremer's St. Pierre de Montrouge, built in Paris in the sixties. Richardson's position of leadership became established shortly after this with the design and construction in 1872–77 of the large and prominent Trinity Church in Boston (PL. 84). In this the presence of elements drawn from the Romanesque of Auvergne and Spain led to the contemporary — and continuing — misapprehension that he was primarily the exponent of a "Romanesque revival." Other work of his of the same period — the Cheney Block of 1875–76 in Hartford, based on the arcaded English commercial mode of the sixties, and the Sherman house of 1874–75 in Newport, an American translation of the early manorial mode of Norman Shaw — indicates better the actual origins of his major inspiration. Such a highly mature and characteristic work as Sever Hall of 1878–80 for Harvard College incorporates no Romanesque elements at all.

Sever Hall is of fine red brick, with rich molded and cut brick ornamentation. But Richardson's favorite materials were granite and brownstone, used rockfaced and laid up in bold patterns of random ashlar. His idiosyncratic delight in rough stone surfaces is almost parodied in his Ames Gate Lodge of 1880–81, in North Easton, Mass. (PL. 83); yet that remains perhaps the most genial of all his smaller works.

As Richardson's production increased up to the time of his premature death in 1886, his buildings grew simpler and more massive, culminating in the arcaded rectangular block of the Marshall Field Wholesale Store of 1885–87 in Chicago (PL. 84). Notable features of his total production, moreover, were the other relatively new types of edifices for which he provided original paradigms that remained popular in America for a decade or more. The finest of his many public libraries was the Crane Memorial of 1880–83, at Quincy, Mass. (PL. 85), the best of his small railroad stations is at Auburndale near Boston, of 1881. In the field of prison architecture, in which John Haviland (1792–1852) had led the way for the whole Western world with his Eastern Penitentiary at Philadelphia of 1823–25, Richardson achieved a monument of almost Piranesian grandeur, as original stylistically as his libraries and stations, with the Allegheny County Jail of 1884–88 in Pittsburgh, Pa. (PL. 83).

He participated to a certain extent in the creation and development of what is called the "shingle style," a remarkable American florescence of original domestic design in the late seventies and eighties. His former assistants, Charles F. McKim (1847–1909) and Stanford White (1853–1906), in the new New York firm of McKim, Mead & White (q.v.) were more prolific than he at this until their conversion to academic design in the mid-eighties. But it was even more specifically W. R. Emerson (1833–1918) of Boston who seems first to have matured the mode shortly before Richardson took it up in his Brvant house of 1880 in Cohasset, Mass. Yet Richardson's Stoughton house of 1882–83 in Cambridge, Mass., is one of the finest extant examples, and his Glessner house of 1885–87 in Chicago, although actually of granite, is (paradoxically) an equally good specimen. Loose, open planning, wide verandas, extensive and freely organized fenestration, casually rambling masses, and continuity of textured surfaces, with little or no detail, characterize the shingle style. Created in the very late seventies, it lasted in general well down into the nineties. But it was soon sharply challenged by a formal colonial revival that was initiated by

McKim, Mead & White in their Taylor house of 1885-86 in Newport, R.I.

Like the later Glessner house, the cobblestone Ames Gate Lodge (PL. 83) may even be considered in a special sense an early example of the shingle style. More characteristic, of course, is the Bell house (PL. 85 and FIG. 258) in Newport, R.I., built by McKim, Mead & White in 1881-82. Perhaps the finest of all, and an excellent illustration of the imposition of formal but not archaeological order in the latest stage of the mode, is their Low house (PL. 85) in Bristol, R.I., even though that was built in 1887, a year after the Taylor house. Comparable work of the mid-eighties by Bruce Price (1845-1903) at Tuxedo Park, N.Y., influenced Frank Lloyd Wright (q.v.) in his youth.

Richardson's relation to the early skyscraper is much less direct than his relation to the shingle style, for he was little interested in the technical developments that made possible the doubling of the heights of commercial buildings in the early seventies. It is desirable therefore to backtrack several decades in order to give a sketch of the prehistory of the type.

The decades immediately following the mid-century had seen a remarkable exploitation of cast iron in commercial buildings, first set off by structures that James Bogardus (1800-74) erected in 1848-49. Of these the Laing stores in New York at Washington and Murray Streets, built in 1849, are still extant; and in many cities examples of cast-iron fronts of the fifties and sixties exist in quantity. The use of an interior skeleton of iron had been introduced in English mills in the 1790s and was later emulated in commercial architecture there; the specifically American contribution was the extensive exploitation of cast iron for exteriors, which was forbidden by building codes in most British cities of the period.

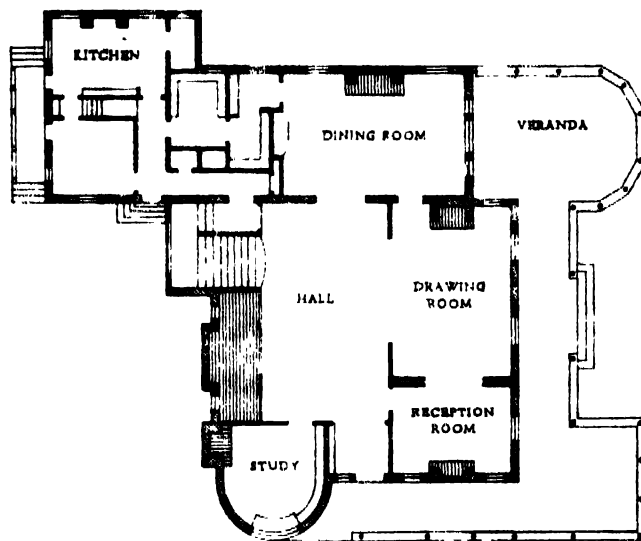
Significant also to the skyscraper story is the Jayne Building in Philadelphia, built in 1840-50 by William Johnston and Thomas U. Walter. Its seven stories rose well above the ordinary commercial structures of the period, and the design of the façade boldly emphasized its unusual height. This and other Philadelphia commercial work of the fifties by S. D. Button (1803-97) and by Napoleon LeBrun (1821-1901) was notable for the increase in the amount of window area and for the use of continuous vertical members between the bays.

It was the introduction of the elevator, rather than any internal or external structural development, that made possible the skyscraper, that is, the skyscraper defined merely as a very tall commercial structure and not — as it is often defined — by the particular character of its construction (see below). In 1844 a steam-operated passenger hoist had been provided in the Bunker Hill Monument, a giant obelisk designed by Solomon Willard (1783-1861) that preceded by a decade Mills's in Washington. In the fifties elevators made their appearance in New York, first at the Crystal Palace in 1853, then in 1857 in the Haughwout Department Store and in the Fifth Avenue Hotel. But the first new office building to be provided with one was in New York, the Equitable Building, completed 1871, for which Gilman and Edward Kimball, with Post as associated engineer, had won the competition in 1868. Despite the financial crash of the early seventies, the first skyscrapers followed immediately after this in 1873-75. One of these, the New York Tribune Building by Hunt, is still extant, but several additional stories have been added to its original nine-story, 260-ft. height. The other was the already mentioned Western Union Telegraph Building by Post (PL. 82). Both used the fashionable tall mansards of the day, and neither evidenced any respect for the straightforwardly vertical expression of the Philadelphia commercial buildings of the fifties.

After the hiatus caused by the depression of the seventies, further development of the skyscraper continued not in New York but in Chicago. There, two lines of advance must be distinguished, one concerned with technical matters, the other with design. The early buildings of Louis H. Sullivan (q.v.), for which his older partner Dankmar Adler (1844-1900) shared responsibility, are modest in size and coarse in detail. But in the Rothschild Store of 1880-81 he revived the verticalism of the Philadelphia buildings of the fifties, using continuous mul-

lion strips the full height of the façade, while for the Troesch Building of 1884 he provided a more horizontal treatment, with recessed spandrels in the wide window bays between the plain brick piers.

In the meantime Daniel H. Burnham (1846-1911) and John W. Root (1850-91) had rivaled the height of the New York "elevator buildings" in their very plain ten-story Montauk Block of 1882-83. For this they developed spread foundations to carry the great weight of the building on the muddy Chicago terrain, into which many earlier structures had gradually sunk; and they reduced the façade treatment to a mere succession of



McKim, Mead & White, plan of Isaac Bell, Jr., house, 1881-82, Newport, R.I. (from Sheldon, *Artistic Houses*).

ranges of segmental arched windows. The Home Life Insurance Building, begun in 1883, was likewise no taller than the first New York skyscraper of ten years before — as in the case of the Tribune Building, its height was later increased by several additional stories — but in it William Le Baron Jenney (1832-1907) used for the first time what is technically called "skyscraper construction." That is, above the lowest stories (which were still of bearing masonry construction) the brick cladding of the exterior walls was carried by the stanchions of the internal metal frame. Of this the thoroughly undistinguished design of the façades gave no inkling, however.

Richardson, in his Marshall Field Wholesale Store (PL. 84) of 1885-87, begun just as the Home Life Building was being completed, made no use of the new skyscraper construction, but he did offer a superb model of dignity, unity, and suavity in the design of a large commercial building, strongly marked by his own personal taste for rough and massive masonry. Adler & Sullivan in their Auditorium Building of 1886-98 likewise continued to use bearing walls of masonry. The design, moreover, was for the most part derived directly from Richardson's masterpiece, although this vast block was taller by several stories and rather smoother in its surface treatment. Here, in the sumptuous detailing of the interior, Sullivan initiated the characteristic, almost "proto-Art-Nouveau" ornament of his maturity. At the same time, in the Tacoma Building of 1887-89, William Holabird (1854-1923) and Martin Roche (1855-1927), both from Jenney's office, employed Jenney's new type of construction more boldly than he had done in the Home Life Insurance Building. They made the special character of the construction evident, moreover, on the exterior by the use of recurrent projecting oriels and by a great reduction in the width of the brick and terra-cotta cladding of the metal members in the external wall planes.

As late as 1891 one of the finest of all of the early Chicago skyscrapers, the Monadnock Building by Burnham & Root,

stripped of all detail and profiled in one subtle line from base to cove cornice, was still of bearing construction as regards the exterior walls. But the new construction had already received notable expression in two other Chicago buildings, one by Jenney and one by Burnham & Root. The Leiter (now Sears, Roebuck) Building by Jenney, built in 1889-90, is a block of almost Richardsonian massiveness. Yet the walls were opened up to a tremendous extent and the delicate colonnette mullions express clearly, despite their Romanesque detailing, the metal frame of which they are the cladding. Burnham & Root's Reliance Building (PL. 86) of 1890, carried to its present height in 1894, is even more expressive of the new skyscraper construction. A refined and lightened version of the Tacoma Building, this has minimal terra-cotta cladding of the piers and spandrels, long vertical lines of projecting oriels, and a very thin slab cornice over all.

Adler & Sullivan used the new skyscraper construction for the first time in their Wainwright Building of 1890-91 in St. Louis (PL. 86). From this all Richardsonian elements have disappeared; but the clear organization of the block, with plain, stone-clad base, pilastered shank, rich, story-high frieze, and slab cornice, has a Richardsonian sense of order and a Richardsonian scale. Order was achieved, however, at the expense of direct expression of the internal skeleton: to emphasize the verticalism of the shank, no differentiation was made between the "pilasters" that clad the structural piers and those which are merely intervening mullions. This treatment, moreover, was repeated on what is perhaps Sullivan's most masterly work, the Guaranty Building of 1894-95 in Buffalo, N.Y. (PL. 87). There, however, the opening up of the ground story, where the spacing of the round piers clearly reveals the true bay width, and the delicate cove below the slab cornice provide at once a greater unity of form and also a more direct expression of the underlying skeleton, while the lacy patterns of the terra-cotta cladding remove any effect of solidity or weight from the exterior.

By the mid-nineties most Chicago firms were building skyscrapers, and some of the most open and straightforward are the work of Holabird & Roche. Although their Cable Building is larger and their McClurg Building more delicately detailed — both are of 1899 — it is especially interesting to see their façades on South Michigan Avenue beside that of the Gage Building of 1898-99 which Sullivan provided (PL. 86). The subtle proportioning, the rich ornament, and the more organic expression differentiate the work of the master from the competent but rather dull work of these contemporaries to whom the technical development of the skyscraper owed so much.

In his only New York skyscraper, the Condict Building of 1897-98, built after his break with Adler, Sullivan had differentiated the mullion colonnettes from the broader members that clad the main piers, somewhat as on his early Rothschild Store. In the Gage Building all mullions were omitted, and in the last of his great buildings, the Carson, Pirie & Scott Department Store in Chicago, of 1899-1901 and 1903-04, he turned to a completely horizontal treatment of the façades (PL. 86). Here the broad oblong windows — of a type already known as "Chicago windows" — were cleanly cut through the flat terra-cotta plane of the façade. The top story was set back beneath the slab cornice, and slim colonnettes revealed the lines of the main structural piers, somewhat as the round pillars of the base had done at the Guaranty Building (it is regrettable that this treatment has in the past few years been modified). At the base here, however, the cast-iron ornamentation of the framelike surrounds of the shopwindows and of the various entrances carried his characteristic ornamentation to its ultimate extreme of virtuosity.

Although McKim, Mead & White in their New York Life Insurance buildings of 1888-90 in Kansas City and Omaha had followed, though with Renaissance detailing, the design formula of Richardson's Field Store almost as closely as Sullivan did in the Auditorium Building, eastern architects rarely followed Sullivan and the other Chicago leaders of the nineties. Even before Richardson's death there had come a major split in American architectural development. Just at the moment in the early

nineties when early skyscraper design in Chicago, direct in expression and almost wholly independent of tradition yet representing an intelligent continuation of the most original and creative aspects of the Richardsonian heritage, reached maturity, the buildings erected there in 1891-92 for the World's Fair of 1893 illustrated in their colonnaded façades of white stucco the national triumph of academic reaction.

This academic reaction had started with the Villard houses (PL. 85) built in 1883-85 in New York by McKim, Mead & White. Slavishly High Renaissance, indeed specifically Bramanteque in detail, this U-shaped group restored the historicism of the Renaissance revival of the second quarter of the century. The same architects' already-mentioned Taylor house in Newport of 1885-86 soon provided an 18th-century Georgian colonial alternative to this academic mode that was destined to remain popular for some fifty years. Their Boston Public Library initiated the use of a more monumental sort of Renaissance design for public buildings that was shortly rivaled by the antique Roman grandeur of their Agriculture Buildings at the Chicago Fair.

d. Two 20th-century currents: Wright and the traditionalists. Thanks to Frank Lloyd Wright and some of his contemporaries, the importance of Chicago as a focal center of American architecture continued almost up to World War I. The Chicago skyscrapers of the early years of the new century continued the line established in the nineties without significant change, but with diminished distinction. They were by that time rather overshadowed by the successive "tallest buildings in the world" that rose in New York. These were not "slabs" in the Chicago manner but shaped towers, as the first skyscrapers of the seventies in New York had been, and they were adapted more or less ingeniously to various modes of traditional design. The most original is the 612-ft. Singer Building of 1907 by Ernest Flagg (1857-1947) — French Beaux-Arts in conception, but very open in the treatment of the central section of its façades below the bulbous mansarded crown. The 700-ft. Metropolitan Tower of 1909 by the firm of N. LeBrun & Sons — LeBrun himself was already dead — has the silhouette of the Campanile of S. Marco in Venice, and the Woolworth Building (PL. 89) of 1913 by Cass Gilbert (1859-1934) is a "cathedral of commerce" covered with rich late-Gothic detail executed in cream-colored terra cotta.

It is generally accepted that the later work, at least, of McKim, Mead & White and their contemporaries and juniors on the East Coast is of less importance than the original work of Frank Lloyd Wright. But although Wright prepared various designs for commercial buildings from the mid-nineties on, he projected no real skyscraper until the mid-1920s. The first that he actually erected is the Price Tower in Bartlesville, Oklahoma, of 1953-55. Until 1914 his contribution was largely in the domestic field, including the years in the Adler & Sullivan office (1887-93). His independent career properly began in 1893 with the designing of the Winslow house in River Forest, Ill. This has often been considered very Sullivanian, actually it is more specifically in sequence with the work that he had been responsible for in the Adler & Sullivan office. By the turn of the century his personal style had already matured, as evidenced in the exterior design of the River Forest Tennis Club of 1898 (PL. 90), in the open planning of the Husser house of 1899 in Buena Park, Ill., and in the dining room added in 1899 to the Waller house in River Forest.

The first true examples of Wright's "Prairie" houses, however, the principal product of the first decade of his mature production (1900-10), were two houses in Kankakee, Ill., of 1900 and a house project designed that same year and published in the *Ladies' Home Journal* of February, 1901. The larger house, for B. Harley Bradley, is an extended, loosely cruciform composition whose gabled roofs project in blunt points well beyond the walls below. The smaller Hickox house (PL. 90) next door has a more advanced plan but is otherwise quite similar. The wood stripping of the stuccoed walls suggests the structural studs underneath, and these are even more directly expressed by the wooden window mullions. The living room, with semi-

octagonal music and dining areas at either end, runs across the "garden front" and leads through French doors to a small terrace. Here was the articulated but unified space that he had already achieved in his Hussar house. Thus Wright offered in 1900 a new concept of domestic planning, simplified and reduced in scale, which was later to be influential throughout the Western world.

All the essentials of Wright's early domestic style are to be found in the houses described. But they received more assured — one can even say more "classic" — expression two years later. The large Willits house of 1902 in Highland Park, Ill. (PL. 90), is of wooden-stud construction but covered with stucco, as were the Kankakee houses.

There is no notable progression in the series of suburban houses that Wright built during the remainder of this decade before going to Europe in 1909, but he offered many other examples of both the cruciform and the square plan, as well as a more elongated type extending along a single axis. Of the many fine examples around Chicago, the small Isabel Roberts house in River Forest of 1908 is one of the best, with its living room in the front wing carried up two stories as proposed for one version of the *Ladies' Home Journal* house.

A quite different type of composition was used for the very compact house that Wright built in Oak Park for Mrs. Thomas Gale in 1909. In this, flat roof slabs — proposed already in 1902 for a boat-club project that was probably intended for execution in concrete — were substituted for the pitched roofs of the other Prairie houses. Moreover, projecting balconies and other cubic features enrich the design plastically in a way that is quite suggestive of the neoplasticist sculpture of the next decade in Europe.

The Glasner house in Glencoe, Ill., of 1905, on the contrary, was extended longitudinally, and the living area was for the first time completely unified. Something of the same extension marks the much larger Robie house of 1909 in Chicago. But there the living room and dining room are separated by the stair and the chimney, and the whole is raised well above ground level. Built of fine Roman brick, this is the most impressive of the early houses. The long lines of the balcony below and of the hip roof above dominate the design; yet there is also a cross element in the upper stories that provides a touch of the abstract, sculptural effect of the Gale house.

Two of Wright's nondomestic works of this period are of special importance. One was the Larkin Administration Building of 1904 in Buffalo, N.Y. Massive and sculptural on the outside, this had in the center a tall, glass-roofed court around which the ranges of offices occupied galleries that were carried by almost Sullivanian piers. The fittings of the offices, including the steel furniture — probably the first to be designed by an architect — were all provided by Wright. Thus he set here a new standard of invention and harmonious treatment in semi-industrial building.

Within the massive slab-roofed concrete block of the Unity Church (PL. 91), the Unitarian church he built in Oak Park in 1906, echoed to the right by the lesser block of the Sunday school, Wright created even more successfully than inside the Larkin Building a new sort of large-scale space composition such as none of his early houses provided room for. The square auditorium with incut corners has double galleries on three sides and a pulpit platform on the fourth, behind and above which is the organ. Both the spatial elements and the structural members seem to cross one another in a sort of three-dimensional plaid. Moreover, the theme is repeated in all the minor features, such as the wooden strips on the rough plaster walls and the overhead lighting fixtures.

The second decade of Wright's mature production opened with the building of houses, among which Taliesin, built outside Spring Green, Wis., for his mother in 1911, is the most notable. It was much enlarged when he moved there himself and was his principal headquarters thereafter. Because of the growing needs both of his family and of his group of pupil-assistants — not to speak of two major fires in 1914 and 1925 — the Taliesin of today is very different, above all in its endless ramification, from what he originally planned in 1911. But the

architectural vocabulary, both of materials and of design, remained more or less the same. While the early Prairie houses almost always echoed in their long low lines the flat Illinois terrain on which most of them were built, Taliesin is wrapped around a softly rounded hilltop just below its smooth crest. The use of various levels inside and a landscapelike elaboration of the characteristic low hip roofs on the exterior make evident his enthusiastic response to a more varied natural setting; afterward the "Prairie" master avoided flat sites for houses whenever he could!

It is not easy to define the Midway Gardens, Chicago, of 1913-14 — Wright's major work of the immediate prewar years. Not quite a beer garden or a music hall, this consisted of an extensive uncovered dining and entertainment area with raised terraces on two sides, a stage and orchestra shed at the far end, and a closed restaurant block along the street. Here Wright's aspirations as a decorator had a great opportunity. Vast compositions of colored circles were used as wall-high murals at the ends of the covered restaurant. Moreover, the new sort of sculptural interest seen in the general design of the gatehouse was carried much further in the openwork "constructions" at the tops of the two towers. There was a great deal of figurative sculpture, all vigorously stylized in a rather cubist way. Thus several different aspects of the abstract and near-abstract art just coming into independent existence abroad were closely paralleled here.

During World War I, in 1915, Wright was invited by the Japanese imperial household to design the Imperial Hotel in Tokyo. Settling in Japan, Wright was chiefly concerned with this commission for the next seven years; he completed the work in 1922. The Imperial Hotel was, after the Midway Gardens, the principal production of what is sometimes called his "mannerist," or "baroque," phase; it was also a major engineering triumph. The construction, consisting of concrete slabs carried on a forest of small concrete piles, had been worked out in collaboration with Paul Mueller, the engineer of the old Adler & Sullivan office, and it carried the hotel safely through the serious earthquake of 1923. However, the massive proportions of the masonry walls produce an effect of castlelike solidity that is wholly inexpressive of the method of their support and very far removed from the light and floating character of the Prairie houses. Abstract ornament proliferated here: some of it, carved in greenish lava, decorates the garden courts of the enormous H-shaped plan; still more was painted in gold and color on the ceilings of the main public rooms.

Overlapping the long period of construction of the Imperial Hotel came a group of houses in southern California in which such baroque excess was increasingly restrained. Hollyhock House in Los Angeles and two smaller houses nearby, all built in 1920, are of poured concrete, very massively handled yet with a good deal of abstract sculptural ornamentation. For a later series of four houses around Los Angeles, beginning with that of 1923 for Mrs. G. M. Millard in Pasadena, Wright introduced a new type of concrete-block construction, reinforced in the joints, which was of great technical interest. But the idea of using concrete blocks cast with relief patterns of geometrical character actually went back to the Midway Gardens of ten years earlier.

In the Millard house, particularly, the happy scale of the molded blocks and the ingenious inclusion of many pierced units produced one of Wright's finest works. This house is not of interest solely for its construction and its decoration, however. In contrast to the horizontal organization of almost all his earlier houses, the Millard house is a tall, rather narrow block. This is entered at the middle level, with the dining room and kitchen below and the two-story living room opening out onto a balcony on the garden side. The main bedroom is approached from a gallery overhanging the rear of the living room. Both organizationally and visually, this represented a surprising turnabout in Wright's approach to domestic design.

For ten years after this, the amount of Wright's executed work declined almost to nothing. But he kept working on various large-scale projects, some of which provided the basis for later buildings.

In creative power, in productivity, and, during the half century following 1910, in international influence and reputation, Wright overshadowed all his American contemporaries. But, inspired eventually by him as well as by Sullivan, there existed for a while in the Middle West what is called the "second Chicago school." To this in the early decades of the century belonged Purcell & Elmslie, George B. Maher (1864-1926), Schmidt, Garden & Martin, and a few other architects. But this school faded out in the twenties as its members either accepted the "traditionalism" of the day or else ceased to find clients. Four rather more important architects appeared shortly after 1900 in California: Bernard R. Maybeck (1862-1957), the brothers Greene (Charles S., 1868-1957, and Henry M., 1870-1956), and Irving Gill (1870-1936).

But the active careers of the Greenes, of Gill, and, to a lesser extent, of Maybeck came to a close, like those of the Chicagoans, shortly after 1915 with the local success of the "traditional" buildings designed by Bertram G. Goodhue (1869-1924) for the San Diego Exposition of that year. These were in the most ornate sort of Spanish baroque, quite archaeologically handled, and in emulation of them most West Coast architects turned away from innovation for almost a generation.

Maybeck, trained at the Paris Ecole des Beaux-Arts in the eighties, contributed to the San Francisco Exposition of the same year as that in San Diego a Fine Arts Building in an equally traditional but more classical vein. Still standing but partly in ruins, the tawny stucco columns and entablatures of this have quite the look of 18th-century pictures by Pannini or Hubert Robert and very little to do with the modern architecture of Maybeck or anyone else. Despite its real charm this was unexpected, for Maybeck had earlier been almost as boldly original as Wright and he was to be again. In his Christian Science Church of 1910 in Berkeley, Calif. (PL. 88), he employed a fantastically eclectic vocabulary of reminiscent forms to produce a highly individual result, and many Berkeley houses, ranging over several decades before and after 1915, proved him a true innovator and one of considerable versatility.

In Berkeley also there is comparable work of the early decades of the century by John Galen Howard (1864-1931) — several houses and also his building for the University of California's School of Architecture, of which he was long the dean. Howard's informal mode is more directly related than that of Wright's Prairie houses to the shingle style, though not particularly to Richardson, for whom Howard had in fact worked for a time shortly before Richardson's death. Most of his extensive building for the university, however, is in an academic and Italianate vein.

The work of the Greene brothers in this period, all houses and for the most part in Pasadena, constitutes a more homogeneous corpus than that of any modern architect of their generation in America except, of course, Wright. Like the informal work of Howard, their houses are related to the earlier shingle style which had been introduced in southern California by East Coast architects in the late eighties. But the Greenes became most notable for their highly successful assimilation of Far Eastern influences. The best of their houses is that of D. B. Gamble of 1908-09 in Pasadena (PL. 92); but the Pitcairn house of 1904 and the Blacker house of 1907, both also in Pasadena, and the later Thorsen house of 1918-20 in Berkeley are also exemplary.

Shingle walls, low-pitched, broad-eaved roofs, and big porte-cocheres and verandas of a sort of semi-Oriental stickwork are the principal elements of the Greenes' very personal mode, producing compositions much more loosely organized than Wright's Prairie houses. Their houses, however, are executed throughout with a craftsmanship that frankly rivals the Japanese, and much more directly than Wright ever did. Their planning is less advanced than Wright's, moreover, but they make much more extensive use than he did of attached verandas and upstairs sleeping porches. The fine cabinet woods and rich stained glass generally used in their interiors created ensembles of a masculine elegance that was hardly equaled even in the most elaborate of Wright's early houses.

The so-called "California bungalow" mode — which was at

worst but a parody of the work of the Greenes, but at its best emulated much of their directness and simplicity, if not their fine craftsmanship — became widely popular, thanks to the propaganda of several magazines, the examples provided in profusion of pattern books, and the extensive production of housebuilders. This was true not only in the Far West but in the Middle West and even in the East during just those years after 1910 when "traditionalism," usually of a neocolonial order, was otherwise most completely in control of American domestic building.

The Greenes' reputation has never been as great as that of the more aggressive but less consistent Maybeck. However when modern architecture began to revive in California during the mid-thirties, the young architects of that state were in general intelligent students of what the Greenes had accomplished so much earlier. Their work, together with Maybeck's and Howard's, supplied a local background for the development of a regional school of modern domestic design in the San Francisco Bay area. This tradition was thus a truly living one, quite unlike that of the Spanish missions. Yet the influence of the mission tradition was not altogether negative in the early 20th century, as is proved by the work of Gill.

Gill was more of a reformer than a rebel, seeking his inspiration as much in the vernacular building tradition of the simple Spanish haciendas as in the more monumental models offered by the missions. Some of his work, such as the First Church of Christ Scientist of 1904-07 in San Diego, or the Laughlan house of 1907 and the Banning house of 1911, both in Los Angeles, with their arched loggias and their ornamental ironwork, is as nearly "Spanish colonial" as that of the outright traditionalists.

Gill quite frequently used, not wooden construction, but masonry walls covered with plain white stucco; thus his work often has a European rather than an American air. His best houses, such as that for Walter Dodge of 1915-16 in Los Angeles or that for Ellen Scripps of 1917 in La Jolla, now the Art Centre there, consist of asymmetrically composed cubic blocks, crisply cut by windows of several different sizes, and have usable roof terraces — or at least flat roofs — above. Thus Gill's houses are surprisingly similar to those of his Austrian contemporary Adolf Loos (q.v.), which they rival even in the assurance of their abstract organization, and approach rather closely the most advanced European houses of the next decade.

Gill's interiors also are somewhat Looslike and very different from the Orientalizing rooms designed by the Greenes; they approach more closely the severe elegance of real Japanese interiors. Fine, smooth, cabinet woods, with no moldings at all, sheath the walls; yet the frequent use of wooden grilles, made up of plain square spindles, provides a quite intimate scale despite the lack of detail.

The academic reaction, starting in the 1880s, swept on for almost a half century not seriously interrupted by the more significant episodes that have just been discussed. It is oversimplification, however, to see in this half century no more than white-and-black opposition between West and East, between the spirit of Wright's work and that of McKim, Mead & White's. For one thing, "traditional" architectural production in the early 20th century continued to be almost as various in its sources of inspiration as the competing revivals of the earlier 19th century. The dominant eclecticism of taste encouraged the survival of an archaeological sort of neo-Gothic in the ecclesiastical and educational fields. Undoubtedly, however, the "Renaissance," "Georgian," and "classical" stylisms initiated by McKim, Mead & White in the eighties and early nineties were more widely and strongly supported than any other sort of historicism. The quality of the work of the McKim firm itself began to decline almost as soon as its leadership of the profession was accepted; even so, the best buildings that the firm designed in the first decade of the new century remain among the most satisfactory examples of traditional architecture then produced anywhere. The Americans and not the French were by this time the worthiest disciples of the Paris Ecole des Beaux-Arts and *ipso facto* heirs of the sturdiest academic tradition in the Western world.

McKim, Mead & White's most characteristic mode remained High Renaissance. This is well illustrated by the University Club in New York, opened in 1900, by the series of branch public libraries that were built there over the next dozen years, and by the old Tiffany Building, also in New York, which was finished in 1906. But their classical mode was equally assured, as can be seen in the Knickerbocker Trust Building in New York and the Bank of Montreal in Montreal, both completed in 1904, in the very similar Girard Trust Building in Philadelphia of 1908, and most conspicuously in the vast Pennsylvania Station in New York of 1906-10.

They also exploited a more modest colonial revival, as in the Morgan house of 1900 at Wheatley Hills, Long Island, as well as the formal neo-Georgian, a vein in which several others, such as Delano & Aldrich and Charles A. Platt (1861-1933), were perhaps even more accomplished. They could also shade the classical toward the Byzantine, as in the Madison Avenue Presbyterian Church in New York, completed in 1906, and even adapt it not unskillfully to industrial use, as in their IRT power station of 1903 in New York. It could even be extended vertically into skyscraper design, as in the New York Municipal Building, finished in 1908. Here they concentrated attention on the ground floor and on the elaborate crowning feature, while all but ignoring the tall, many-storied shank between. The classical mode could also be spread thin over vast apartment blocks, such as the one built in 1918 at 998 Fifth Avenue. This is, in fact, a rather superior early example of the sort of apparently solid building masses that lined that thoroughfare above 57th Street facing Central Park, and made of Park Avenue between 46th Street and 96th Street by the late twenties a sort of artificial canyon. Yet what they were utterly incapable of doing was to make their architecture come alive in the 20th century even to the extent that they had been able to do, up to a point, in the later 19th.

In contemporary estimation various buildings of Gothic rather than classical, Renaissance, or Georgian design had a higher reputation, and some still do. Cass Gilbert's already-mentioned Woolworth Building (PL. 89), finished in 1913, was but the first of a considerable number of Gothic skyscrapers, notably Howells & Hood's Chicago Tribune Tower of 1923-25, yet it has remained to posterity the best example of medieval design applied to the tall commercial building. Such a once-acclaimed example of Romanesque design as the Shelton Hotel of 1929 by Arthur Loomis Harmon (b. 1901) hardly rivals Gilbert's either in height or in interest.

The New York Telephone Company Building, completed in 1926 by Ralph Walker (b. 1889) while he was still with the firm of McKenzie, Voorhees & Gmelin, has much more character. Its fortresslike mass and its isolated location on the river's edge have ensured that it will continue to vie with the Woolworth Building for the attention of the admirer of the New York skyline. Most of the other individual large office buildings of the twenties in New York and in other big American cities are but incidental elements in the man-made mountain ranges of their skylines, memorable chiefly where only one or two very tall ones dominate the whole *Stadtbild*.

The Gothic churches of this period, although naturally more "correct" than those of earlier periods, have not held attention as well as the overscaled secular work of medieval design that is so totally unlike any real productions of the Middle Ages. Ralph Adams Cram (1863-1942), the best-publicized Gothic practitioner in the first third of the century, erected buildings that are dull and flat when compared to those built in the seventies and eighties by G. F. Bodley and J. L. Pearson, from which they seem largely to derive. All Saints' Church, Ashmont, outside Boston, which was built in 1892, is, because of its early date, the least anachronistic. St. Vincent Ferrer in New York, by Cram's former partner, Goodhue, completed in 1916, is a large and vigorous example of late Gothic more continental than English in character; it is finer than any of the work Cram did either with Goodhue or later with another partner, Ferguson.

Goodhue was largely responsible also, as has been noted, or stimulating the Spanish colonial revival in California. He

moved on, however, in the early twenties just before his death, from Gothic and baroque "traditionalism" to a muddled sort of "semimodernism" most conspicuously illustrated by his Nebraska State Capitol in Lincoln. Although vaguely Byzantine, this is towered rather than domed in the old national tradition, hardly a startling evidence of independence. His contemporary Los Angeles Public Library is rather starker but little more successful. Had he lived longer, however, he might have passed beyond this transitional phase.

Several other architects matched the achievement of McKim, Mead & White in their own most academic modes. Many examples are found in Washington: John Russell Pope (1874-1937) provided in his Temple of the Scottish Rite, completed in 1916, a grandiose reconstruction of the Mausoleum at Halicarnassus; his National Gallery, built in the thirties, is a late and very inferior work. Henry Bacon (1866-1924) completed the Lincoln Memorial (PL. 88), at the end of L'Enfant's Mall, a few years later. This peripteral Greek Doric temple of white marble crowned by a high attic might almost have been designed in Paris in the 1780s — this is itself no mean compliment — and provides the most notable late addition to the classical monuments of the capital. Equally French, but with no such distinguished prototypes, is the Grand Central Terminal (PL. 88) in New York, built in 1903-13 by Reed & Stem and Warren & Wetmore. Better organized than the Pennsylvania Station, its concourse provides one of the grandest spaces that the early 20th century ever created, and, unlike that of McKim, Mead & White's station, this was freshly designed, not copied from a Roman bath.

So prolific was American building in the twenties that it is hard to epitomize; so much that happened, moreover, appears in retrospect of very superficial interest. For the later skyscrapers, architects often essayed new stylistic garments as the older ones lost their freshness. The application of novel kinds of decoration, usually borrowed from the Paris Exposition of 1925, brought no basic renewal of form. But just after the crash of 1929 had finally terminated the country's greatest building boom, the second skyscraper age came to a belated close with the erection in the early thirties of Shreve, Lamb & Harmon's Empire State Building and the initiation of the Rockefeller Center project by Reinhard & Hofmeister. In the latter (PL. 95) the grouping together of various structures around a plaza and the resultant urbanistic organization of a considerable area replaced the earlier goal of building ever taller single skyscrapers just climaxed in the Empire State Building. This somewhat more social approach, which has been recognized ever since as a turning point in the development of American cities, was not to be followed up in executed work to any great extent before the group of isolated skyscrapers in Pittsburgh's cleared and rebuilt Golden Triangle. Yet the several large projects of urban renewal announced in the mid-century for New York, Boston, Fort Worth, and other cities, offer great promise along this line. Certain of these in Philadelphia, in Detroit, and in Denver indicated that the 1950s moved on from where the 1930s left off.

In the terms of this article neither the Empire State Building nor Rockefeller Center is properly to be considered an example of traditional architecture, even if it is hardly proper to label them "modern" in the sense of the European architecture of their day. Although it is also not a real example of the new architecture as then understood in Europe, as was Howe & Lescage's Philadelphia Savings Fund Society Building of 1932 (PL. 89), such a stripped skyscraper as the vertically banded Daily News Building in New York of the same year by Raymond Hood (1881-1934) far outranked its oversized local rivals, while his contemporary McGraw-Hill Building (PL. 89) actually introduced the horizontal design of the modern Europeans to New York.

Almost as impressive in size and complexity as the skyscrapers of the twenties were the homogeneous groups of new structures that many academic institutions, both new and old, had built for themselves. Their mode is classical at the Massachusetts Institute of Technology, built by Welles Bosworth (b. 1869) in 1912-15 on the Charles River in Cambridge, Mass.,

but "Georgian-colonial" in the "Houses" that Coolidge, Shepley, Bulfinch & Abbott built also along the Charles River for Harvard in the twenties. At Princeton, N.J., Cram & Ferguson's Graduate College (PL. 88), completed in 1913, is Gothic; so also are the Harkness Quadrangle, designed in 1917, and other later buildings for Yale at New Haven, Conn., by James Gamble Rogers (1867-1947). An exception is Cram's Rice Institute at Houston, Tex., opened in 1912; there the mode is Byzantine. The two most popular styles for such new educational plants, however, were what was known as "collegiate Gothic" and neo-Georgian, in a special Anglo-American mixture. The one was based on work at Oxford and Cambridge that was quite as likely to be 19th century as medieval in date, and the other was usually too grand in scale to be plausibly colonial yet too casually composed to be properly Anglo-Palladian.

The work of Americans abroad during this period is readily distinguishable from that of foreign traditionalists. The American Academy on the Gianicolo in Rome, built by McKim, Mead & White in 1913, has a certain cold refinement in its High Renaissance detailing that no Italian at that date would have wished to equal. In London Helmle & Corbett's Bush House of 1925-35, rising between the Strand and Aldwych, has a crisp organization of form and a sense of responsibility to its neighbors evidenced by few large structures of the period by British architects. The considerably later American Embassy built by Delano & Aldrich in the Avenue Gabriel in Paris even seems to reprove Gabriel's own work across the Rue Boissy d'Anglas for overstatement! Much of this special American quality may be explained by the anonymity resulting from the domination of the profession by well-organized firms rather than by strong individual personalities. But the anonymity was balanced by real competence within the limited field of reference.

The most important early step in the development of the large-scale American architectural office was probably taken in Chicago. When his designing partner, Root, died in 1891 just after they had taken on the general planning of the World's Fair of 1893, Daniel Burnham set up a new sort of organization with himself as executive. The office of McKim, however, his chief associate in designing the Fair, had probably already moved well along the same road. There is a definite connection also with the increasing size and number of skyscrapers, for their design and construction inevitably required a vast amount of repetitious drawing that could only be handled effectively by large forces of assistants working in what were later to be scornfully labeled "plan factories." The natural result was an architecture devoid of personal flavor.

The same is even more true of industrial work. Here it was Albert Kahn (see below) who about 1905 had taken the lead in arranging a kind of subdivision and routing of the drafting work in his office in Detroit, quite similar to the novel methods of mass production for which his new and vastly enlarged local automobile factories were being so ingeniously designed. Such ways of working are found at their highest development in the group of firms that joined forces with Reinhard & Hofmeister to produce Rockefeller Center, in the office of Harrison, Abramowitz & Abbe, which is more or less their heir, and finally in the several offices of Skidmore, Owings & Merrill in Chicago, New York, San Francisco, and Portland.

In the mid-1930s, when "traditional" design was beginning to lose its exclusive hold on Americans and new architectural ideas from Europe were being increasingly imported, the activity of that unrepentant individualist, Wright, began to revive. His modest Willey house, first projected in 1932 and built in 1934 in Minneapolis, opened what almost amounted to a second lifetime of production. The house is low and L-shaped, with practically no ornament, but within its plain brick walls a major change in domestic planning was initiated. With the living room and the dining room completely merged, as was done in the Glasner house of 1905, the kitchen is separated from the general living area only by a range of glazed shelves.

It was not the Willey house, however, small in size and very quiet in design for all its novel planning, that appraised

the general public of the vigorous renewal of the sexagenarian Wright's activity. That he could begin his career once more at a very high level of creative power became widely known only with the completion of two much larger buildings, both of them designed in 1936. Falling Water (PL. 91), the Kaufmann house in the Pennsylvania woods, is floated over a waterfall by means of cantilevers with a boldness in the use of ferroconcrete Wright had not hitherto even approached. The Administration Building for the S. C. Johnson Wax Company in Racine, Wis., his first semi-industrial commission since the Larkin Building of 1904, was built in 1937-39. This is as remarkable for the technical ingenuity and originality of the use of concrete piers with disk tops — totally different from the cantilevering of Falling Water — as for its design.

At the rear, Falling Water has a towerlike portion built of rough local stone, and from this vertical core project three levels of concrete slabs with plain parapets at their edges. Thus Wright achieved an emphatically horizontal composition of three-dimensional effect somewhat similar to, but much more elaborate than, that of his Gale house of 1909. The unified living area has stone walls only on the inner, or dining, side. One the other sides this area extends over the waterfall, and the all-glass walls, framed only by light metal mullions, hardly appear to separate the interior space at all from the open terrace beyond. The various bedrooms and their terraces are similarly related in the upper stories.

In the Johnson Building the curve rather than the cantilever provides the principal theme, and instead of interpenetration of interior and exterior space there is almost total enclosure. The tall general office has a sort of forest of inverse-tapered concrete piers supported on small bronze shoes and carrying disks of concrete whose edges are nearly tangent (PL. 415). Between these disks the rooflights are glazed with Pyrex tubes, and bands of similar tubing run around the building just below the gallery and at the cornice level of the smooth red brick walls. More specialized adjuncts are curved or diagonal, lending to the building as a whole a machinelike elegance.

In 1937 Wright erected the first example of what he called his "Usonian" houses, for Herbert Jacobs in Westmorland, near Madison, Wis. Most of these houses were designed on a square module, including the version prepared for *Life* magazine in 1938, which thereby received the sort of publicity the *Ladies' Home Journal* had given to three of his early house designs a generation before. But soon Wright sought to develop house plans in which the hexagon and the triangle served as the unit of design. He tried this first in the Hanna house in Palo Alto, Calif., in 1937; and in many others later he used planning based on 60-30-degree angles.

In the prewar planning of his own winter residence, Taliesin West, begun in 1938 in the desert near Phoenix, Ariz., he used 45-degree diagonals, with most of the structural elements either battered or canted in section. But what gives this complex — like Taliesin itself, at once a house, a working place, and a school — its unique qualities is the substructure of what he called "desert concrete," that is, great rough blocks of tawny local stone placed in forms and merely "stuck together" with concrete. Over this the superstructure consists of dark-stained frames of timber filled for the most part with canvas to encourage, in this hot, dry locale, a maximum flow of air.

The versatility of Wright's invention in his "second" career was remarkable. Many ideas that had hitherto been explored only on paper came at last to fruition, when his services were once again in great demand. Yet the flat stucco walls, long window bands, and cantilevered roof slab of the Kaufmann guest house, built just above Falling Water in 1939, and the Sturges house of the same year in Brentwood Heights near Los Angeles, cantilevered in wood from a hill slope, suggest that Wright was also ready to rival the achievements of the European modern architects whose work and whose influence in America he had denounced.

In his design for the entire campus of Florida Southern College at Lakeland, Fla., begun in 1938, Wright's planning was at once very formal and boldly asymmetrical; and it elaborated the angular theme of his project of 1927 for a desert resort

at Chandler, Ariz. — the actual point when his interest in 60-30-degree angles first started. The buildings at Florida Southern, starting with the Ann Pfeiffer Chapel of 1940, are largely of concrete-block construction; but rather less use of patterned elements was made in them than in the work of the early twenties.

World War II caused less of an interruption in Wright's career than World War I. Several projects designed during the war years came to execution once it was over. The new house built in 1948 for Herbert Jacobs at Middleton in the country west of Madison, Wis., was quite different from the Usonian one of 1937. Ever since an unexecuted house project of 1938, Wright had been interested in the circle as a planning theme. He had tried it out in the Florida Southern Library just before World War II, but the Jacobs house was the first of a series (PL. 424) that were built later with their plans curved throughout. In this the two-story living area is carried part of the way around a circular garden court, and the bedrooms open onto the balcony above. To the rear the house is almost buried in the hilltop over which rise low walls of rough stone. A small circular core near one end of the convex side rises, almost like the tower of a castle, to give a contrasting vertical accent.

An extension built onto the Johnson Administration Building in Racine, Wis., and completed in 1949 also makes much use of curved forms. At the side of the earlier office building, Wright provided a square court surrounded by open carports whose solid brick walls shut out the rather squalid neighborhood. Toward the court there are low concrete columns with disk tops, matching those of the office building he erected ten years earlier. In the center of the court rises a laboratory tower. The floors of this treelike structure, alternately square with rounded corners and circular, are cantilevered out from a central core which contains the elevators. Bands of brickwork and Pyrex tubing, again matching the original building, surface the tower except at the base; there the open space of the court continues under the cantilever to the central core. This smallish tower in Racine led the way to Wright's skyscraper of 1953-55, the Price Tower in Bartlesville, Okla. (see above). This later work, however, partly occupied by offices and partly by apartments, is more truly the realization of a project Wright prepared originally in 1929 for an apartment house for St. Mark's Church in New York.

During the years 1947-52 Wright built a Unitarian church of very original character in Madison, Wis. The products of his multifarious activity in these years included, moreover, many projects for all sorts of structures. A decade of designing and redesigning preceded the building of the helical concrete Solomon R. Guggenheim Museum in New York, begun in 1956, a major work of his second productive period.

c. 1930 to the mid-20th century. Wright's path was always so independent that it has seemed better to present the full story of his work before dealing with the broader current of modern architecture in the United States since 1930, inspired as it was largely from abroad.

As has already been noted, the revival of Wright's activity in the mid-1930s paralleled the increasing acceptance in America of the results of the architectural revolution of the 1920s in Europe. But that the architectural revolution had had some definite American roots may well be recalled here. The inspiration of Wright's early work, brought to the attention of Europeans by the German publications of 1910 and 1911, played a real part in the early formulation of new international ideals in the second decade of the century. Moreover, the great achievements of American engineers, epitomized by such feats as the Brooklyn Bridge of 1869-83, designed by John A. Roebling (1806-69), had long been admired abroad (PL. 82). The development of the modern factory of ferroconcrete cage construction, initiated by Ernest L. Ransome and carried much further after 1905 by Albert Kahn, had also attracted considerable international attention, as had the vast multicylindrical grain elevators built by Middle Western engineers.

When the new European architecture had its first American

showing in the International Exhibition of Modern Architecture held at the Museum of Modern Art in New York in 1932, many architects and critics, including Wright, rejected its stark forms as somehow "un-American." Admittedly it was an Austrian, Richard Neutra (q.v.), who had first strikingly demonstrated the new "international style" in America in his Lovell house of 1929 in Los Angeles. But already in 1932 a much larger and more notable example was arising in Philadelphia, the Philadelphia Savings Fund Society skyscraper (PL. 89), joint work of the well-established traditional architect George Howe (1886-1954) and the Swiss William E. Lescage (b. 1896). But skyscraper building then ceased for some fifteen years; and the new architecture, borrowed quite frankly in these years from Europe, was gradually acclimatized in other fields.

Of the four Europeans whose work had been given special prominence in the 1932 Exhibition, two were Germans displaced by the Nazi proscription of modern architecture, who had settled in America before the end of the decade: Walter Gropius (q.v.), who soon brought over Marcel Breuer (q.v.) to join him, and Ludwig Mies van der Rohe (q.v.). Another distinguished German, Eric Mendelsohn (q.v.), came to America a little later. Gropius, who was in 1938 made Chairman of Architecture in the Harvard Graduate School of Design by Dean Joseph Hudnut, played a major role in the reorganization of American professional education in the field. No longer did Americans go to the Paris École des Beaux-Arts to study, nor were American training methods based upon the Academic French pattern of instruction, but rather on those of the German Bauhaus.

Mies also accepted a teaching position, as head of the School of Architecture at the Armour (later Illinois) Institute of Technology in Chicago, and took charge of the entire design of the Institute's new South Side campus. But his influence was not merely as an educator: American architects, young and old, found in the discipline of his later work a main line of direction, one that was peculiarly appropriate to American methods of building and applicable to all sorts and kinds of structures. His first executed American work, completed in 1943, was the Metallurgical Research Building for the Institute in Chicago. Earlier European modern architects who had settled in America during the twenties — for example, Eliel Saarinen (q.v.) — had never had a comparable influence. However, Saarinen's services were in ever increasing demand, and such a very late work as his Christ Lutheran Church in Minneapolis, built in 1949 indicates that his creative powers lasted to the end of his life (PL. 95).

Despite the hiatus of the war years, American building activity followed an almost continuous upward curve from the mid-thirties. The late thirties and early forties saw a very great increase in the amount of work that could properly be described as modern. Moreover, several of the architects who became leaders of the profession after the war made their start in those prewar years: notably Pietro Belluschi (b. 1899), Edward Stone (b. 1902), Skidmore, Owings & Merrill, and Philip Johnson (b. 1906). Not surprisingly, private houses usually represented the most advanced work. Much published at the time were the New England groups, that at Lincoln, Mass., by Gropius and Breuer, and that at Belmont, Mass., by Karl Koch (b. 1912) and several associates. In contrast to their rather "international" character were various West Coast examples, by Belluschi and by John Yeon (b. 1910) in Portland; by Gardner Dailey (b. 1895), by Wurster, Bernardi & Emmons, and by John Funk (b. 1908), all around San Francisco; and by Harwell Hamilton Harris (b. 1903) in the Los Angeles area, where Schindler and Neutra followed a less regional line. Of the Eastern houses, one of the best was Gropius and Breuer's Chamberlain house in Wayland, Mass., of 1940, very small but very open in plan and executed in wood with great precision and care for proportion. The looser and less doctrinal domestic architecture around Portland and San Francisco is well illustrated by Yeon's large Watzek house of 1938 and Dailey's dramatically situated Owens house of 1939, which looks across San Francisco Bay at Sausalito. Funk's Heckendorf house at Mo-

desto, also of 1939, is more formal and, with its high-walled front court, almost as Miesian as Philip Johnson's own house of 1942 in Cambridge, Mass.

Several able young architects also turned their attention in these years to low-cost housing, especially in the Far West. Vernon DeMar's (b. 1908) Farm Security Administration housing of 1936-37 in Chandler, Ariz., exploiting local structural traditions, and Neutra's Channel Heights housing of 1943 at San Pedro, Calif., crisp and precise in its use of wooden construction, represented two variant approaches; Hugh Stubbins's (b. 1912) defense housing of 1942 at Windsor Locks, Conn., was more modest and less exemplary.

Such housing projects were often extensive, but they included no large structures and were generally built in a hurry and at minimal expense. However, many more considerable individual buildings were going up in these years as well. At one end of the scale might be placed the Museum of Modern Art of 1939 in New York, on which Stone collaborated with Philip L. Goodwin (1885-1957), with its tall façades largely of glass, its provision for movable partitions inside, and its pierced projecting slab above the roof terrace — then a strikingly novel motif. At the other end of the scale are such factories as those built by the Kahn firm for Dodge Trucks in Detroit in 1938 and for Pratt & Whitney in East Hartford, Conn., the following years; in both, the standards Albert Kahn (1869-1942) had established early in the century were maintained and improved upon. Now these factory buildings could be seen and admired as architecture by Americans as well as by Europeans. The newly formed firm of Skidmore, Owings & Merrill made its first mark with a group of pavilions, frankly temporary but very inventive in design, for the New York World's Fair in 1939, and soon followed this in 1942 with their admirably utilitarian Great Lakes Naval Training Station in Illinois. Neutra's Los Angeles school of 1934-35 was still considered experimental, but five years later modern design for schools had become more generally acceptable. Widely acclaimed were the Crow Island School of 1940 in Winnetka, Ill., on which the Saarinens, father and son, collaborated with Perkins, Wheeler & Will, and the Acalanes Union High School of 1940-41 in Lafayette, Calif., by Ernest Kump (b. 1911) and several associates; the first suggested the elder Saarinen's earlier work in Michigan, while the second was closer to Neutra's experimental school.

It is not possible to arrive at any common definition of American architectural production for these years. Certain of the West Coast architects had strongly regionalist inclinations supported by their respect for the work of such older California architects as Maybeck and Greene & Greene. On the other hand, the houses of Gropius and Breuer and the projects of Mies van der Rohe seemed rather inhuman and doctrinaire to most Americans. The period was not a transitional one; rather, it was still preparatory. Curiously enough, however, the process of digestion and acclimatization of European ideas seems to have continued underground during the unproductive war years; and after the war modern architecture seemed at last as American as in so many of its essentials it had always been.

By about 1948, when building activity was reviving generally in the Western world, American leadership in modern architecture came to be generally recognized abroad. Where Americans had once sought to perfect their training in Europe, young foreigners now came to America to study in the advanced schools of architecture headed by Gropius, Mies, Howe, and Wurster and to work in American offices. American architects were increasingly called on to work abroad, and it was not the old established firms but the newer architects whose services were sought. Furthermore, when the émigrés of the thirties were asked to work outside the United States, as Breuer was for the Bijenkorf Department Store in Rotterdam, built in 1955-56, and for the Unesco Building in Paris, built in 1956-58, they were thought of as Americans, not as Europeans.

It is hard to write sequentially of so recent a period, particularly as the accomplishments of American architects have not been so consistent at any other period since the 1830s and even the various manifestations of unease, with the resultant monotony that became so apparent after 1950, have tended

to take common forms. Because the device had much earlier beginnings, the ubiquitous employment of what is called the "curtain wall" (a thin skin, generally in large part of glass, stretched outside the structural members of most very large and even many medium-sized buildings) must be discussed before the growing interest in what, for the moment, can be referred to as "shaped constructions" is considered.

The classic modern example of the curtain wall is the glazed block of Gropius's Bauhaus of 1925 in Dessau. The first example, later research seems to have established, was that of the Hallidie Building in San Francisco, completed by Willis Polk in 1918. Inspired by Le Corbusier's Salvation Army Building in Paris of the early 1930s and with his active assistance as consultant, the curtain wall was first carried to skyscraper height by Lúcio Costa and his associates in the Ministry of Education building in Rio de Janeiro, built in 1937-42 (PL. 142). It was, of course, already a commonplace of American factory design where steel, rather than ferroconcrete, provided the structural frame. As with several other characteristic aspects of modern architecture — the use of the open plan in houses, for example — it was the coming together of American technical experience with European esthetic aspiration that led the way to the increasingly international acceptance of the curtain wall for large architect-designed structures.

Except for their very large scale, there was nothing especially notable about the skyscrapers which Wallace Harrison (b. 1895) had contributed to the Rockefeller Center group. But when Harrison, as Director of Planning, determined the final design for the Secretariat Building of the United Nations in New York, its 39 stories carried the curtain wall to new prominence and initiated the period of its dominance in skyscraper design. Not only Le Corbusier himself but also Oscar Niemeyer, who had succeeded Costa as leader of the group that built the Rio Ministry, were members of the Board of Design Consultants for the United Nations in 1947-48, and the Secretariat as erected by Harrison in 1948-50 incorporated more of their ideas than of anyone else's. There were other novelties, moreover, in the design of the Secretariat besides its vast curtain walls. Like the early Chicago skyscrapers — and, of course, the Rio Ministry — it was a plain slab, not a shaped tower in the New York tradition that went all the way back to the first skyscrapers built there in the 1870s (this tradition has been weakening, however, even in New York, since the early 1930s). The extensive site available for the United Nations project also made possible what was, for New York, the greatest innovation of all: the tremendous slab rose in isolation, far from any structures of comparable height or bulk, quite in the manner that Le Corbusier as an urbanist had been urging for tall buildings for more than a quarter century.

The line of the United Nations Secretariat was followed up almost at once in two notable skyscrapers, one by Harrison & Abramowitz in Pittsburgh and the other by Skidmore, Owings & Merrill in New York, both completed in 1952. In the curtain wall of the first, the Alcoa Building, aluminum plates were substituted for much of the glass and the slab was L-shaped. The second, the more striking Lever House (PL. 95), almost wholly glazed, owed a good part of its interest to the fact that the slab occupied only a portion of the site, the plaza below and to the left being open at ground level and with only a mezzanine defining the line of the lot.

Through the 1950s a very considerable number of basically similar skyscrapers have been built in cities from coast to coast by these two firms and by many others, in some cases with sunbreaks in the Latin-American tradition outside the curtain walls, such as Le Corbusier and Niemeyer had recommended for the western side of the United Nations Secretariat. Skidmore, Owings & Merrill's Inland Steel Building in Chicago deserves mention, as do Lescaze's 711 Third Avenue in New York (1957), I. M. Pei's Mile High Center in Denver (1955), and in Los Angeles, Welton Becket's Standard Savings and Loan Building and his Texaco Building, and Victor Gruen's two Tishman Buildings. Many of these buildings rise on isolated sites; others, at least, have modest plazas hollowed out of the urban matrix at their base.

Closely related in design to these business skyscrapers, for which they actually set the pace, were the pair of tall apartment towers constructed in 1951 by Mies van der Rohe at 845-860 Lake Shore Drive in Chicago. Several other similar apartment towers by Mies have risen on the Chicago lake front since. But Mies's principal contribution in this field, for which his personal discipline of expression more than Le Corbusier's eventually provided the guiding principles, is the Seagram Building of 1956-58 in New York (PL. 95), set at the rear of its own deep plaza diagonally across Park Avenue from Lever House. The relief afforded, as on the Chicago apartment towers, by projecting mullions, here all of bronze, the classic harmony of the vertical proportions, and the generosity of the spatial setting have made this the most striking and the most influential of all. Philip Johnson was associated with Mies on this job.

Curtain walls and Miesian influence have been by no means restricted to the skyscraper field. Eero Saarinen (q.v.) in the General Motors Technical Institute (PL. 94), first planned in 1946 while his father was still alive but executed in the early and middle fifties, used this technical device for a large number of related semi-industrial structures set about a rectangular sheet of water, much along lines suggested by the buildings Mies had erected at the Illinois Institute of Technology over the preceding decade. Skidmore, Owings & Merrill, among others, also carried the new postwar mode of office building design away from the cities; most notable is their extensive plant for the Connecticut General Life Insurance Company, completed in 1957 in Bloomfield, Conn.

This has certainly been the main line of achievement in postwar America and the one most emulated abroad, particularly in Latin America and West Germany. But almost as soon as it was under way, and often at the hands of the same architects, a reaction (or at least a markedly different line of development) made its appearance. The curtain wall owed a good deal to ideas that European modern architects had long been exploiting, as did the other current — an interest in shaped as opposed to reticulated structures. This has been in large part a response to extra-American stimulation, partly from Europe, partly from the Latin lands to the south in the Western hemisphere, and as often from the work of engineers as from that of architects. With this development tends to be associated an interest in more masculine, not to say brutal, finishes, in contradistinction to the machine-made slickness of curtain-walled structures.

A constituent part of the Le Corbusian paradigm for tall buildings, as first illustrated in execution in the Rio Ministry, was a relatively low, curved and angled auditorium block at the base and to one side of the tall rectangular slab. This Harrison eventually used also for the United Nations, although with no great distinction, thanks to a rather arbitrary use of structurally meaningless curves. Already, however, while the United Nations Secretariat was being planned in 1946-48, the Finnish architect Alvar Aalto (q.v.) was building Baker House at the Massachusetts Institute of Technology in Cambridge. In this dormitory the regular cage of the concrete skeleton was drastically bent in plan to give the whole river front a continuous serpentine curve; the chosen materials were heavy and rough-surfaced — especially the red brickwork, varied by irregular clinkers, which clad the walls — and only the suspended staircases on the rear have any relation to curtain-wall techniques.

It cannot be said that Baker House had any considerable influence. Like the fantastic work of Bruce Goff, best illustrated at this point by his domed Ford house of 1950 in Aurora, Ill. (PL. 93), Baker House seemed at the time but an isolated reaction against the increasing industrialization and consequent reticulation of 20th-century building methods. In fact, however, it proved premonitory in several ways.

The Raleigh, N.C., State Fair Arena, designed by Matthew Nowicki (1910-49) but executed after his death in 1951-53 with some modification by the collaborating engineer Fred Severud and William Henry Deitrick (b. 1905), has little in common with Baker House. Here the problem of covering a

vast unified space encouraged the use of curvilinear structural forms suitable to ferroconcrete and quite unrelated technically to the reticulated structure of most postwar buildings. The saddleback roof of this building was later used even more monumentally by Stubbins for his Kongresshalle in Berlin, completed in 1957.

While still working with his father in 1947, Eero Saarinen had brought out into the open the arched laminated-wood trusses of the Tanglewood Opera Shed in Stockbridge, Mass. And, among the standard curtain-walled buildings of the General Motors Technical Institute, he introduced a shallow shell dome for the Styling Building (PL. 94). Finally, well before that vast Middle Western project was complete, he turned sharply away from the Miesian vocabulary, both in his Kresge Auditorium and in his chapel at the Massachusetts Institute of Technology, which were designed as early as 1951 but not completed until 1955. The circular chapel has the rough brick walls of Aalto's nearby Baker House and an almost traditional use of arches at the base. But the real novelty here was the emotional modulation of the lighting — partly from above, partly from below, none through the side walls — to achieve a devotional atmosphere in sharpest contrast to Mies's rectangular classroomlike chapel at Illinois Institute of Technology, built at about the same time. The auditorium, for which Saarinen used a shell dome of concrete, with rather less justification than Nowicki and Stubbins used their more novel forms, was less successful.

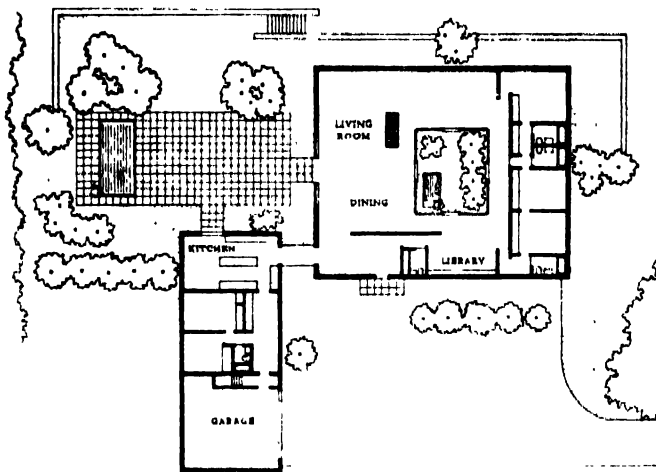
Far more striking are the vast intersecting shell-concrete vaults of the Lambert Airport in St. Louis (1953-55) by Hellmuth, Yamasaki & Leinweber, even though these are still to a considerable extent related to the cross-vaulting traditions of earlier periods. Saarinen and many others pressed on in this new direction, however, and by the late fifties many projects of fantastic shape, based on imaginative boldness of structural conception, were coming to realization. In Saarinen's Ingalls Hockey Rink of 1958, built for Yale University in New Haven, a single low concrete arch springs from end to end, and the roofing on either side is suspended from cables tied to similar concrete arches in the horizontal plane.

Obviously these shaped structures best serve specialized functions in auditoriums, airports, exhibition halls, and other such buildings. But the examples given here indicate that the Miesian curtain-wall convention, so suited to the mechanization of building technique and to large multicellular structures, does not have universal dominance in postwar America. Fifteen years after the end of World War II, the reticulated expression, which had undoubtedly received the widest public acceptance, was sharply challenged.

With the now nearly universal acceptance of modern architecture in America, the architects, both foreign-born and native (whose significant work before the war often consisted of but a few houses), mostly moved on to build larger and larger structures. For example, Gropius's postwar work, designed in association with The Architects Collaborative, has included the Harvard Graduate Center, completed in 1950, in Cambridge, Mass. — a group of seven buildings — and several schools (PL. 93). Breuer, whose Geller house on Long Island of 1946 was notable for its zoned plan and the expressive use of single-sloped roofs, a decade later was busy with the major foreign commissions in Holland and France that have already been mentioned. Johnson, concerned chiefly with houses in the early postwar years, built many larger edifices later, of which the Port Chester, N.Y., Synagogue, of 1955-56, with its canopylike suspended ceiling and its free-standing oval lobby, well illustrated his continuing movement away from a more than Miesian severity of style (PL. 92). Although Paul Rudolph's large Sarasota High School of 1957-58 was still in the common tradition of reticulated expression, his Jewett Art Center at Wellesley College in Wellesley, Mass., designed the year before, broke new and highly personal ground in a tradition which seems, in part at least, rather Wrightian. Eliot Noyes's (b. 1910) plant for International Business Machines at Poughkeepsie, New York, rivals in size those of Kahn and in finish those of Skidmore, Owings & Merrill.

Yet even if the focus of American achievement seemed in the late fifties to be moving away from the private house — in the same period in which the commercial builders of the nation came quite generally to substitute so-called "ranch-house" and "split-level" models, based on a vulgarization of various clichés borrowed from modern architects, for "Cape Cod cottages" — the decade that began in the late forties was in several senses a classic period for the modern American house.

Mies's Farnsworth house at Plano, Ill., was not built until 1950-51. But the project for this exquisite glass cage framed in



Philip Johnson, plan of Richard S. Davis house, 1954, Wayzata, Minn. (from *Architectural Review*, 1955, pp. 236-47).

white-painted steel dated from 1946, and that, with other Mies house projects, set the pace over the next ten years for many of the finest houses, often built by architects for their own use. Philip Johnson's "glass house" of 1949-50 in New Canaan, Conn., was the most extreme statement (PL. 93); but in other houses, both nearby and as far afield as Houston, Tex., Wayzata, Minn. (FIG. 275), and Vaucresson, near Paris, he has illustrated an increasingly personal expression of classically restrained house design. Noyes's own New Canaan house of 1954 follows a similar line, using somewhat rougher materials, and José Luis Sert's own house of 1957 in Cambridge, Mass., is a more Latin example, with not one but three courts. The Florida houses by Twitchell & Rudolph and by Rudolph alone (PL. 92), mostly in or near Sarasota, combine a Miesian severity with a more Wrightlike articulation, and even on the West Coast the local regionalism tended to give way in these years to a more regular and disciplined expression. The most notable example of this is Charles Eames's (b. 1907) own house of 1949, built at Pacific Palisades on the coast west of Los Angeles, with its visible steel frame rising two stories and its organization of *De Stijl*-like standard elements.

But in house design, as in the design of large structures, other currents were evident in the 1950s, such as the adaptation of Buckminster Fuller's light domes for domestic purposes and the exploitation of small shell forms produced by spraying concrete on inflated balloons of plastic or over curved cages of wire lath, developed experimentally by Noyes and others. As always, ambitious architects, having reached a sort of plateau of achievement, were striking out in new directions, with all the dangers of crude execution that bold experimentation usually entails. Whether a definite stage had been all but completed now that the mid-century in America had seen the achievement of many — if certainly not of all — of the goals set up for modern architecture in the early decades of the century, first by Wright and then by the Europeans of Mies's generation, it is impossible to say. In the mid-20th century it seemed likely that accepted current standards would be maintained, since the pace of change was not necessarily increasing. This was in spite of many architects' growing unease and urge for structural and esthetic adventure.

Whether for skyscrapers or for individual houses, American models became increasingly admired and emulated abroad. In part this was because mid-20th-century America provided the general model which the whole Western world seemed to be approaching — if not always with unalloyed enthusiasm. But in part also this was because modern American architecture is the heir not only of its own past, with which this article deals, but of all the architecture of the Western world and most conspicuously of the sort of modern architecture that began to crystallize in the early work of a few young Europeans about 1920. The Seagram Building, for example, was the ultimate realization of Mies's early project of 1919 for a glass-walled skyscraper.

On the other hand, the achievements of Wright, continuing over seventy years, always retained an autochthonous quality that was certainly not so evident in the more universal sort of modern architecture produced by his American juniors. Since the story of American architecture after 1939 became a part — indeed, increasingly a major and focal part — of the story of architecture in the entire Western world, Wright might appear to have been the last purely American architect. But then he may also be considered, in some sense, to have been the first, even though he would himself have conferred that title on Sullivan.

In looking back over the years since the 17th century, however, it can be seen that American architecture has generally existed in some sort of organic relationship to that of Europe, even if colonial architecture was a product of the outermost fringes of Western culture, while 20th-century modern architecture is at its core. Nowhere more than in the life stories of American architects is the intimate linkage of the New World to the Old recurrently evident. Through the time of Upjohn, Eidlitz, and Lienau, American professional leaders were likely to be foreign-born, and the next two generations after them were in large part foreign-trained; even Wright owed more, at least temperamentally, to his Welsh-born mother than to his American-born father. American architecture was therefore maintaining its own tradition in learning from the Old World in the 1930s and in adopting as its own such leaders as Gropius and Mies whom the Old World then cast off.

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PAINTING. *a. 1492 to 1775.* The drawings and prints associated with the discovery and exploration of what is now the United States of America were and are a part of European art. The history of painting and print making that can be called American began after permanent settlement ensured the continuity of civilization; and according to present information a generation or more elapsed after the foundation of each colony before any surviving paintings were executed. During that interval a few topographical views engraved in Europe constitute a prolongation of the earlier visual reporting by Europeans for Europeans.

While the Eastern settlements were being established, there commenced in the far Southwest a species of religious painting which was part of the arts-and-crafts activities associated with the missionary effort of the Roman Catholic Church projected from Mexico and branching out in several streams from Texas to the California coast as far north as San Francisco. Most of this painting was produced by local artisans and amateurs in New Mexico and Arizona, many of them itinerants; it was in general a freely calligraphic adaptation of the saintly images available to them in a limited repertoire of paintings and prints brought in by the friars. The resulting *santos*, on wood panels of small dimensions, usually primed with plaster, were executed in earth and vegetable pigments of local manufacture, except for imported indigo. They fulfilled religious needs on mission altars and family shrines until near the middle of the 19th century. Through most of the period in which they flourished, of course, the far Southwest had no direct contact through the continental wilderness with the thirteen colonies along the Atlantic.

It is recorded that in 1663 or earlier Hendrick Couturier (active 1661-74) painted a portrait of Governor Peter Stuyvesant in New Amsterdam. An existing portrait cannot be connected with Couturier, and seems to be by the same workman who painted the governor's son (*Nicholas William Stuyvesant*, 1666; New-York Hist. Soc.). Neither can these portraits be connected with another man, Evert Duyckinck I (1621-1702), who was a craftsman in glass and was also called a limner. Several of his descendants continued the glass business and described themselves as painters. His son Gerret (1660-ca. 1710) is credited with portraits of himself and his wife (same owner), of 1700 or thereabouts. The *Peter Stuyvesant* (same owner) is adequately modeled with good luminosity in a manner already conservative in Holland, while the Duyckinck pair are amateurish adaptations of a later and more artificial stylism; the intervening thirty years in New York are not now sufficiently documented for this change to be traced in detail.

For that same time in New England more is known. There is evidence of a limner in Boston soon after 1660, who may

have painted *John Endecott* (ca. 1665; privately owned). In 1670 a definite painting personality was manifested in five full-length portraits of various children in the Gibbs and Mason families (PL. 96) (two on loan; Worcester Art Mus., Mass.). The *John Freake* and the *Mrs. Freake and Baby Mary* (1674; privately owned; PL. 96) are similar in style, though probably by another limner. In general effect these all continue the Tudor tradition of England, yet with marked disparity significant for colonial conditions. The subtle modeling and sensitive line of the earlier professional work are replaced by artisan approximations. The colonial examples are technically sound as shopwork, but that kind of skill debars the elegance of sophistication and permits only that of naïveté.

Also of the year 1670 is the *John Davenport* (Yale Univ.), and in 1677 the same workman made another ministerial effigy now called *John Wheelwright* (Massachusetts State House). By reasonable inference they are assigned to native-born John Foster (1648-81), who also taught school, worked out astronomical calculations for almanacs that he compiled, and made wood engravings to illustrate books which he himself wrote and printed. He was thus the earliest known American instance of an amateurism that always impairs and often debases the craft of painting. Many later amateurs more than restore the balance with a rough vigor or a delicate grace of perceptiveness, but no such compensating quality is discernible in Foster's feeble drawing and uncertain characterization.

The shop craft of the child portraits was as medieval as the homes in which they were placed. The guild technique was still being taught in London by members of the Company of Painter-Stainers, and one of their number, Thomas Child, actually removed to Boston, where his professional activities can be traced from 1788. At various times he was commissioned to paint window frames and shutters, a fence and a house, funeral decorations and cannon carriages; and there is reason to include portraits in the list, even though no example is now known. This manifold application of a basic training was the artisan's essential function in any colonial town.

Much of the decorative work executed by such a painter was for funerals — hatchments, escutcheons, drapes for the horses of funeral coaches. But as towns grew into cities, he would find increasing employment in making signs for shops and taverns. Signs were ephemeral, receiving no sanction of sentiment for their preservation as portraits did. They must, however, be included in any complete account of the colonial experience of painting, because their secular symbolism permeated daily life, and by the end of the period they had become largely pictorial. As picture galleries for the people, the streets of Boston and Philadelphia were the colonial parallels to the streets of London itself.

The colonial emphasis on portraits and signs and even lower forms had as one of its remotest causes the Protestantism of the North Europeans from among whom the colonists came; the consequent absence of religious art reduced painting in particular to a practicality giving little scope to imagination. The additional pressure of the New World environment toward utilitarianism can be observed in the few examples of print making before 1700. The essentially European character of the topographical views extended to the maps (some with inset views) made of several colonies, and these were much more concerned with documentation than with pictorialism. It was the amateur John Foster who made a colonial beginning in reproductive craft, for in wood engraving he cut book ornaments, a view of Boston, a map of New England (1677), and the first known portrait print in the colonies, *Rev. Richard Mather* (1671).

No period is stylistically watertight, and in New England before 1700 a few portraits associated with Thomas Smith (active 1650-90) partly anticipate the later change in style. His *Self-portrait* (Worcester Art Mus., Mass.) and his *Maj. Thomas Savage* (1679; privately owned) are psychological documents for the Puritan type, and some of their forcefulness is traceable to the use of unsubtle shadows by which the features are modeled. The surrounding space, however, remains optically almost as unrealized as in the older manner. In the overlapping

of periods, that older manner persisted beyond the time of which it was characteristic; and in the anonymous portrait of centenarian *Mrs. Anne Pollard* (1721; Massachusetts Hist. Soc.; PL. 96) some artisan who continued to think as a sign painter used the facial shadows as part of a decorative pattern.

Even in the new century there was no clear affirmation at first of the style which was to dominate it. In Charleston *Mrs. Henrietta Johnston* (d. 1728 or 1729), the first known woman painter, introduced the medium of pastel in portraits (Gibbes Art Gall., Charleston, S.C.), more attractive than Foster's oils but almost as timid. In Annapolis after 1708 Justus Engelhardt Kühn (d. 1717) painted two child portraits, which replaced the earlier indeterminate interiors by thinly painted formal gardens even less related to colonial actuality. The most vigorous work of the early 18th century was done by unidentified artisans up the Hudson Valley as far as Albany. With crude drawing and broad handling they reasserted the shop craft basic to most colonial painting, but at the same time they variously adapted a formula of design, late Renaissance in character, which they derived from prints. They comprehended the formula so poorly in three-dimensional terms that they unconsciously caricatured it, but their rough domestication of a sophisticated stylism accurately embodied a whole society's aspiration and imperfect achievement. Schuylers and Gansevoorts and other patroon families were thus made over in the image of country gentlemen or minor nobility. A more fluent version of this coarse manner occurred in Virginia in portraits of the Jaquelins (ca. 1722; Virginia Mus. of Art), and those of the Brodnaxes told the same cultural and social story. In New York a little later two sets of child portraits for the related De Peysters (New-York Hist. Soc.) and Van Cortlandts (Brooklyn Mus.) have a smoother version of the stylistic artifice of the new fashion in social wish fulfillment.

John Watson (1655-1768) arrived in 1714 and lived out a long life in Perth Amboy, N.J., but worked much in nearby New York. The one acceptable oil portrait by him thus far discovered, the *Gov. Lewis Morris* (1726; Brooklyn Mus.) is not outstanding. The dozen miniature bust portraits and "fancy" drawings in pencil and wash are a very mixed lot dominated by manneristic exercise. A more important painter-immigrant of that time was Gustavus Hesselius (1682-1755), who reached Delaware in 1711 and soon moved to Philadelphia, then lived in Maryland (ca. 1718-34) and probably made trips to Virginia, before returning to Philadelphia. His work, like Watson's, needs more investigation before it can be fairly summarized; but at least some of his portraits got beyond a formula to perception of individuality. His *Self-portrait* and the *Mrs. Gustavus Hesselius* (both ca. 1740; Pennsylvania Hist. Soc.) are psychologically acute despite dullish painting. More significant in this respect are his portraits *Lapowinsa* (PL. 97) and *Tishcohan* (both 1735; same owner); they are the first instance in colonial painting of sympathetic comprehension of Amerinds as persons.

Both Watson and Hesselius succeeded in extending the painting experience of some colonials beyond portraiture. Watson decorated his painting-room shutters with imaginative renderings of heroes, which attracted visitors. Hesselius is known to have painted several religious pictures, and two mythological paintings by him have survived. In *Bacchus and Ariadne* (ca. 1725; Detroit Art Inst.) a restless array of awkwardly drawn figures embody a rather ingratiating fancy. A similar indulgence is solicited by other efforts by unnamed decorators to charm or impress the eye. Several panels of rather flamboyant artisan workmanship remain from the Clark-Frankland house in Boston (ca. 1715; Maine Hist. Soc.); a picture-paneled room from Marmion in Virginia survives intact (ca. 1750; Met. Mus.); and an elaborate series of wall paintings on a staircase in Portsmouth, N.H., can be examined *in situ* (ca. 1750; Warner House). Such works in private homes were of course seen by relatively few people. Sets of religious paintings (Moravian Hist. Soc., Nazareth, Pa.) were bestowed upon the Moravians of Pennsylvania by one of themselves, John Valentine Haidt (1700-80), who arrived in 1750. Yet the effective extension of painting beyond portraiture on the popular level was by

means of landscape and secular anecdote on many overmantels in taverns and modest homes.

Through the 18th century the colonists increasingly bought prints of colonial scenes, so that views of city harbors and important buildings were locally engraved with greater frequency. In this field the most interesting figure was the century's earliest, William Burgis (active 1716-31). Some of his drawings were engraved in London and a few by himself in Massachusetts and New York. Burgis's *View of Boston* (ca. 1725) was followed by Bishop Roberts's *Charleston Harbor* (1739) and George Heap's *Philadelphia* (1754), all three engraved in London. Burgis's *Harvard* (1726) was followed by John Greenwood's *Yale* (1749) and W. Tennant's *Princeton* (1764), the last two of these engraved in the colonies. Practically informative maps and moderately decorative designs on business cards were locally engraved in larger numbers, but narrative prints were few until the propaganda pressures of political dissensions gave rise to cartoons and caricatures.

Soon after 1725 another influx of portrait painters began, which continued, with intervals, past the mid-century and strongly affected the last colonial generation of native-born painters. The first four among the newcomers distributed themselves rather widely. To Boston in 1726 came Peter Pelham (1697-1751), followed in 1729 by John Smibert (1688-1751). Charles Bridges painted portraits in Virginia for at least five years beyond 1735. In 1739 Jeremiah Theüs (d. 1774) settled in Charleston for 35 years of work that made him one of the few incoming specialists to achieve even a modest prosperity in his profession.

Pelham painted some portraits, but he was by profession an engraver in mezzotint, producing the first known colonial example in his *Cotton Mather* (1727). Six of his prints were taken from his own paintings, which of itself suggests that the portraits were done for the sake of the prints. Moreover, Pelham could hardly have engaged in serious rivalry with Smibert, who dominated Boston from 1730, when his first exhibition was received with a long poem of praise. As a youth Smibert had raised himself from house painting to portraiture, thus anticipating one of the principal career patterns of the colonies; and the adaptability this indicates may account for his occasional mild realism in rendering some colonials. After he settled in Boston he was never called upon to equal the scale and complexity of a group picture completed in Newport, the *Dean Berkeley and Entourage* (1729; Yale Univ.); and in the many subsequent single figures there was much routine painting (PL. 98). His large collection of copies and casts and prints had been formed for teaching purposes, and the educational effect of even the diminished portion of it that remained in his studio after his death has been frequently noted. Bridges stayed too short a time to match the production of his contemporaries, but the suavity in *Maria Taylor Byrd* (Met. Mus.) and other portraits shows him as outstanding at the time. Theüs in Charleston, with a smaller mind and a smaller formula, at best achieved a glossy charm typified in *Elizabeth Rothmaler* (1759; Brooklyn Mus.).

In Boston Nathaniel Emmons (1704-40) was a pre-Smibert native-born workman, whose slavish dependence upon prints makes his artistry a dubious matter, but his obituary gives eloquent evidence of parochialism in Bostonians' ideas about painting. Joseph Badger (1708-65) (PL. 99) repeated Smibert's transition from shop to studio and won the favor of Bostonians, who, to judge by *Cornelius Waldo* (Worcester Art Mus., Mass.) and *Mrs. John Edwards* (ca. 1750; Boston Mus.), were conservatively resistant to the frivolity of fashion soon to be seen in work by Blackburn. But much the most interesting among this mid-century group of native-born painters was Robert Feke (ca. 1705/10-50?), who painted his first dated work in Boston under the influence of Smibert. This work, his only known group, is the *Isaac Royall and Family* (1741; Harvard Univ.). For the rest of that decade Feke led a busy painting life in Newport, his home, and Philadelphia and again in Boston. Even if the controversial points in his still confused biography are left undecided, he can yet be studied in his documented works as the most talented of all the native-born colonial

painters, Copley (q.v.) excepted. His love for the medium of paint and his use of restricted but sumptuous color culminated in the life-size full-length *Samuel Waldo* (Bowdoin Mus., Brunswick, Me.), one of the most impressive among the many colonial portraits that tend toward generalization instead of individualization (PL. 98).

Of the six portraitists who constitute the last group of the foreign-born, only one remained until his death. He was known in New York as Lawrence Kilburn (1720-75), who painted a few portraits and further supported himself by keeping a store. The other five not only left the colonies after stays of varying lengths but also during their stays either traveled extensively or made several moves, presumably in search of work. William Williams (active 1746-75) painted stage scenery and portraits that also wear the look of the stage; both *Deborah Hall* (1766; Brooklyn Mus., New York) and *The Denning Family* (1772; privately owned) are stiffly posed in settings of which the sitters are unaware. In Philadelphia Williams was of help to young Benjamin West; he later moved to New York, after a trip to the West Indies. Both John Wollaston (active 1749-58) and Joseph Blackburn (active 1753-64) left many portraits, Blackburn in New England and Wollaston from New York on south. More than any others they emphasized the artifice of fashion by repetitive poses and costumes and by a marked gloss in finish, which with Wollaston ranged through warm browns and with Blackburn ventured upon brighter and usually colder hues. Most important, both painters insisted upon expressions seemingly worn like clothes. Wollaston's *Children of Warner Lewis* (ca. 1756; College of William and Mary, Williamsburg, Va.) and Blackburn's *Winslow Family* (1755; Boston Mus., PL. 99) embody the idea that the main function of painting is to affirm family wealth and social position. Cosmo Alexander (ca. 1724-72), during his six or seven years in the colonies, and Thomas McIlwirth (active 1757-67) worked to the same end but with less effect, for the technical aplomb of Wollaston impressed Benjamin West and John Hesselius to the point of imitation, and the assimilation of Blackburn's design and treatment of textures was important in young Copley's development.

Copley, of course, stands supreme among the few native-born painters who closed the period with the demonstration that painting was not only a necessary part of the transplantation of civilization but also an expressive language for the colonial experience. Yet for his generation life was more than ordinarily difficult. Two youths of promise died before they could prove themselves: John Meng (1734-54?) in Philadelphia and Nathaniel Smibert (1734-56), son of the Boston portraitist. John Greenwood (1727-92) went abroad permanently in 1752. The paintings he left behind in Boston show some character but are not of major importance; the most interesting memento of his colonial youth is a curious mezzotint of sluttish *Jersey Nanny* (1748, PL. 99), which also carries a roughly rhymed preachment at fine ladies. In New York Abraham Delano, Jr. (1742-95) fell back on shopkeeping like Kilburn. Even the distinctive talent of John Mare (1739-95?) was not kept busy there; he had to seek patrons elsewhere. John Hesselius (1728-78), son of Gustavus, painted portraits from Philadelphia to Virginia until he made a financially fortunate marriage. His occasionally flamboyant use of Wollaston's mannerisms, as seen in *Charles Calvert and Slave* (1761; Baltimore Mus.; PL. 98) subsided into the sober characterization seen in *Mrs. Richard Galloway, Jr.* (1764; Met. Mus.). Troublous times did much to blight the generation, and certainly caused Copley to settle permanently in London; and two men of lesser talent, Pratt and Chandler, who nevertheless did significant work, seem shadowed by the cloud of what might have been. Matthew Pratt (1734-1805) at thirty achieved an almost impressive concept of pictorial space in *The American School* (1765; Met. Mus.; PL. 97) without the trappings of allegory or history; and the accounts of the signs by which he supported himself in later years indicate that this concept persisted in his mind as he practiced the portraiture on which Americans insisted. As Pratt was rather admirably provincial in saving himself from the inappropriate artifices of the time, so Winthrop Chandler (1747-90) was

perhaps equally so in doggedly painting away despite the limitation of his painting experience to the inadequate artisan tradition (PL. 97). He made portraiture an excuse for bold designs, as with *Rev. Ebenezer Devotion* (1770; Brookline Hist. Soc., Mass.), and within narrow overmantels he ventured upon landscape, literal and fanciful, upon anecdote and still life.

Even in boyhood John Singleton Copley (q.v.) conceived of painting as an art not limited to portraiture, and the example long called *Peter Pelham* (1753?; privately owned), an identification now regarded as untenable, shows that before he could render individuality or manage color he sought to achieve an interesting composition. He quickly explored the available resources for self-teaching in anatomical plates, in prints of mythological subjects and British portraits, in the works of Feke and Blackburn. More important, he studied directly the material objects capable of reinforcing character or enhancing design to the point where the portrait becomes also a picture. One thing he did not teach himself during his American period was the modifying effect of atmosphere; in consequence, his oils leave the forms rather hard, at times even harsh, and the colors rather glaring, oftentimes unharmonized. Despite these defects, his actual brush stroke became notably free and rewards examination today. In pastel and miniature he was hardly less brilliant than in oil, and in all three mediums from 1765 until his departure in 1774 Copley's work constitutes the climax of all colonial painting (PL. 101). Representative examples, from among many, are *Nathaniel Hurd* (ca. 1765; Cleve. Mus.) and *Mrs. Sylvanus Bourne* (1766; Met. Mus.). His removal from America to England led to changes in his art, but they only emphasize in retrospect the uniqueness of his colonial achievement.

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Virgil BARKER

b. 1775-1865. From the departure of Copley in 1774 until the return of Stuart in 1792 there were no artists of equal caliber in America. Nearly all the pre-Revolutionary painters—Smibert, Gustavus Hesselius, Feke, Wollaston, Badger, Greenwood, Blackburn—had died or had left the colonies before the struggle for independence began, and in the difficult years after its conclusion Copley in London was tempering the harshness of his New England style in portraits and conversation pieces. In *Watson and the Shark* (1778) he had vigorously dramatized

a contemporary event; in 1783 his *Death of Major Pierson* had a unity of movement and of color beyond the powers of his fellow countryman Benjamin West (q.v.), who had gone to Europe in 1760 in search of a more complete education than was obtainable in Pennsylvania, had known Anton Raphael Mengs and other connoisseurs in Rome, and had produced a *Departure of Regulus* which looked forward to the neoclassicism of Vien and David and which won him the patronage of George III. The shrewd theatrics of his *Death of General Wolfe* (1771), the preromantic turbulence of his study for *Death on the Pale Horse* (1802), and his prestige as president of the Royal Academy belong to the history of European painting, as do Copley's achievements in the 1780s and the decline of his powers before he died in 1815. West's importance for his compatriots lay in his long-sustained influence on younger Americans, among them Pratt, Charles and Rembrandt Peale, Stuart, Trumbull, Fulton, and Allston, who got encouragement and instruction in his London studio (PL. 104).

In the absence of a major painter, the Revolution received a meager and often crude documentation by the print makers: Paul Revere (1735-1818) engraved a caricature showing tea being forced down the colonial throat, and plagiarized a print by Henry Pelham in his *Boston Massacre*; Bernard Romans (ca. 1720-84), who is said to have drawn maps for the Continental army, published his *Exact View of the Late Battle at Charlestown* a few weeks after the smoke had cleared from Bunker's Hill; the blockade of Boston inspired a series of water colors by Christian Remick (1726-after 1783); and four line engravings were made by Amos Doolittle (1754-1832) from equally stiff paintings by Ralph Earl of the episodes at Lexington and Concord.

In its first quarter-century the new nation was conscious of its importance as a political experiment, as its growth westward to the Mississippi opened new vistas of development and its old distinctions of caste and privilege gave way to a more flexible society. In the arts dependence on Old World standards weakened in favor of an aggressive assertion of republican ideals. Portraits characterized the new man; landscapes acquired a more specifically local flavor; history painters dramatized the recent past. Men of wealth began to encourage native painters; the Pennsylvania Academy of the Fine Arts opened in 1806 to encourage and train American talent, and John Trumbull 10 years later was president of an academy in New York. The Peales combined science and art in their Philadelphia and Baltimore museums.

This transformation was neither sudden nor complete, as Federalists clung to the old ways and Jeffersonians explored new forms in cultural as in political matters. In portraits, for example, one finds enormous variety: Robert Pine (1730?-88) from London attempted the grace of Romney; Henry Benbridge (1743-1812) applied in Norfolk and Charleston a surface slickness learned in Italy; the solid painterly quality of Christian Gullager (1759-1826) had been acquired in Copenhagen and Paris; Adolph Wertmüller (1751-1811), whose *Danaë* shocked Philadelphia, was trained in Sweden and France. Among likenesses on a smaller scale were the miniatures of Edward Malbone (1777-1807) and Charles Fraser (1782-1860), the small pastels by the roving James Sharples (ca. 1751-1811), his wife and two sons, and the hundreds of delicate profiles in crayon and water color made by Charles Balthazar Julien Fevret de Saint-Mémin (1770-1852) with the help of a tracing machine. The conscientious but dull Edward Savage (1761-1817) was one of many who limned George Washington; another was the medalist and modeler in wax Joseph Wright (1756-93). Study with West gave discipline and competence to the portraits and occasional landscapes and genre pictures of William Dunlap (1766-1839), better known as the first historian of American art.

Other men less professionally trained for their task sought patrons in the back country; their common trait was a direct and uncompromising approach, an often harsh but usually revealing delineation of character. The Connecticut Valley, for example, had Reuben Moulthrop (1763-1814) in the 1790s, and also Richard and William Jennys, both of whom sharply

set forth personality with a few modulations of color and an engraver's precision. The most remarkable limner of this region was Ralph Earl (1751-1801). His *Roger Sherman* (ca. 1777) had been a revelation of the austere New England character, six years in London modified but did not fundamentally change his firm outlines, the solidity of his rather flat color (PL. 100). The heavy forms of *Mrs. Moseley and Her Son* (1791) move before a wide landscape of sun-warmed meadows and lush trees that suggests an awakening interest in nature for nature's sake.

The complete antithesis of Earl was Gilbert Stuart (q.v.), seventeen of whose thirty-seven years had been spent in England and Ireland when he returned in 1792 to apply a fresh and painterly English technique in hundreds of American likenesses (PL. 102), including the oft-repeated George Washingtons which fixed the image of the *pater patriae* in the minds of his countrymen. Nobody questioned his primacy in portraiture or the fitness of his relaxed and ingratiating style to sitters in the new republic; and long is the list of younger men directly or indirectly affected by his manner.

While Stuart gladly confined himself to face painting, John Trumbull (1756-1843) and John Vanderlyn (1775-1852) attempted what were currently thought the nobler themes of art—the great event, the enduring myth. Trumbull copied Correggios and Raphaels in West's studio, noted in Paris the chill perfection of David and Vigée-Lebrun, and chose episodes from his country's war for a series of large canvases (PL. 103) which would earn him the title "Painter of the Revolution." Vanderlyn had developed in Paris and Rome a superb draftsmanship and a solid color when he made his *Ariadne*, his *Marius*, and a charming panorama that showed the palace and gardens of Versailles. Both painters knew frustration when the fresh vigor of Trumbull's first studies was lost in the large final versions placed in the Capitol and when Vanderlyn's public proved indifferent to *Versailles* and the frozen posture of *Marius*, and uncomfortable in the presence of his naked *Ariadne*.

Closer to the mind and heart of his generation than the Federalist Trumbull or the "frenchified" Vanderlyn was that ingenious citizen, Charles Peale (see PEALE), for whom painting was but one of many interests. His concern with present people and events survived a two-year association with West and gave a lively and sympathetic quality to his soberly drawn and conscientiously painted portraits (PL. 100). Peale knew Washington not only as artist but as fellow soldier and turned from the palette to arranging stuffed birds and animals for his museum, to the invention of moving transparencies, and a dozen other projects. The picture in which he recorded his exhumation of the bones of mastodons had no trace of the conventions and heroics of history painting but a plain and delightful truthfulness. He taught his sons Raphaele (1774-1825) and Rembrandt (1778-1860) his own directness and solidity; in 1805 the latter's *Thomas Jefferson* conveyed the sitter's humanity and his intellect; in 1823 the former created a masterpiece of deceptive realism, *After the Bath*.

The Peales were much in evidence when Charles organized the Columbianum exhibition of 1795, the first of its kind in the country, revealing this family as pioneers in the neglected field of still life. Charles's brother James (1749-1831) showed one on that occasion, and in the following years Raphaele's simple arrangements of books or baskets of fruit on a table had a sure sense of rounded forms, a delicate response to textures, and an obvious relish for the familiar object (PL. 100). This tradition was still strong when Rubens Peale (1784-1865) signed a still life in his seventy-seventh year.

Another form of activity that implied a nation's consciousness of itself was the study of native plants, birds, and quadrupeds by naturalists who were also skilled draftsmen. The *Travels* of William Bartram (1739-1823), published in 1791, was the fruit of journeys to Florida and westward to the Mississippi, and its plates of flora and fauna were done with a precise and delicate hand; the widely traveled Alexander Wilson (1766-1813) was encouraged by Bartram to gather material for a nine-volume *American Ornithology* (1808-14), for which his drawings were engraved by Alexander Lawson (1773-1846).

John James Audubon (q.v.) had not only a draftsmanship disciplined by David in France before he came in 1806 but a love for the beauty and promise of the new country and a will to record its wildlife that survived all obstacles. First a storekeeper in Kentucky and a maker of portraits, Audubon about 1820 began his long and difficult exploration of forest and swamp. Having collected over four hundred large water colors of birds, he worked to secure subscribers and supervised in England their engraving by Robert Havell, Jr., for the magnificent *Birds of America*. This elephant-size folio was an artistic achievement of high order, in which Havell's hand-colored plates faithfully translated the author's sure drawing, his fine sense of color, and a feeling for pattern that beautifully placed the birds and their surroundings on the page (PL. 106).

In the graphic arts of the republic one finds line engravers on metal and likewise the practitioners of newer methods. Among the former were Cornelius Tiebout (ca. 1773-1832) and Benjamin Tanner (1775-1848). As the pantheon of national heroes grew and political-tensions sought release, the caricature multiplied in the form of burlesque portraits by James Akin (ca. 1773-1846), satirical prints of the War of 1812 in which William Charles (1776-1820) imitated Gillray and Rowlandson, and the rather cumbersome drolleries that gave David Johnston (1799-1865) the title of "American Cruikshank." The best prints of the period, however, were the views of historic cities, of new towns, and of places where nature had not yet been tamed by man, often the work of men professionally trained before they arrived. From Scotland came the Robertson brothers, Archibald (1765-1835) in 1790 and Alexander (1772-1841) the following year, to teach landscape in all media at their Columbian Academy in New York and to practice what they taught. Shortly afterward two versatile Englishmen settled in Philadelphia, William Birch (1755-1834) and his son Thomas (1779-1851), to paint and engrave portraits but also to make excellent views. The son, who was to paint naval battles, joined his father in a series of 28 Philadelphia scenes published in 1800.

More suitable than the engraved line or the wiry etching for translating delicate tones and graded washes was the process of aquatint. Between 1816 and 1818 England provided America with several accomplished water-colorists who were also aquatinters. The *Picturesque Views of American Scenery* (1820-21) were drawn by the Englishman Joshua Shaw (ca. 1777-1860) and aquatinted by his countryman John Hill (1770-1850); William Wall (1792-after 1864) was a master of water color when he tramped the Hudson Valley from Luzerne to Manhattan, and 20 of his views were faithfully rendered into aquatint by Hill for the famous *Hudson River Portfolio* of 1820-25. In the 1820s another medium, the lithograph, found favor because it was cheaper to print, capable of more impressions, and close to the freshness of the original drawing. The first was made in 1818 or 1819 by Bass Otis (1784-1861), and a few years later the lithographic press of the Pendleton brothers reproduced drawings of impressive public buildings by the architect Alexander Davis.

The painting of landscapes was stimulated at the turn of the century by four Englishmen who migrated between 1790 and 1795. William Groombridge (1748-1811) worked in Philadelphia and Baltimore. George Beck (ca. 1748-1812) sought subjects and patrons in Pittsburgh and in Lexington, Ky. The Hudson and the Potomac were painted by William Winstanley (d. after 1806), who also exhibited panoramas. Francis Guy (ca. 1760-1820) made rather naïve views of gentlemen's estates in Baltimore and, later in life, painted the quiet streets of Brooklyn under snow. New England meanwhile saw the marines and mural decorations of Michele Corné (ca. 1752-1845), who worked in Salem, Boston, Providence, and Newport and who painted naval battles in "Mr. Madison's War."

Such artists as these were ranging beyond mere topographical data to exploit the picturesque. Thanks to the view makers, the sea pictures of Birch and Corné, and the exquisite plates of the *Hudson River Portfolio*, landscape was ready to reflect attitudes toward nature and to become not a sideline but an art in its own right.

The United States of the 1830s was a sprawling nation

where men lived, as Tocqueville said, in greater equality of fortune and intellect than elsewhere in the world. The human tide spilled into the great central basin and beyond; the population multiplied as men from a dozen countries fed the shops and factories of Eastern cities or turned Western clearings into farms. The contrasts of urban and frontier existence, the fierce political conflicts between a robust democracy and the persisting habits of an earlier age, kept Jacksonian America in unstable balance. In matters of taste, men like Cooper mistrusted the egalitarian principle as a downward leveler, while Greenough foresaw slow and wholesome progress as the artist responded to what people loved and wanted, and Emerson challenged the writers to chant their own times and social circumstance. Nobody could doubt that the country's enormous variety of landscape, of human types and behavior, offered new themes for artists. From 1826 the National Academy offered instruction and annually showed its results. Dunlap's list of collectors in 1834 showed that, in contrast to a few men of wealth in the first republican years, dozens of bankers, merchants, and politicians now took pride in fostering a native art. Thoroughly Jacksonian in the 1840s was the American Art-Union, an organization which bought, exhibited, and sold original paintings and which distributed prints each year to its thousands of members throughout the country.

In this atmosphere Trumbull, Vanderlyn, Morse, and Allston discovered that their exalted notions of history painting had slight appeal for the great public. At sixty-eight, Trumbull saw four out of the twelve large paintings which had been his ambition installed in the Capitol and scathingly criticized; Vanderlyn was a bitter man of sixty-five when he left for Paris to complete a stilted *Landing of Columbus* for the same rotunda. Samuel F. P. Morse (q.v.) made some of the finest portraits of the period (PL. 104) as a reluctant alternative to the more ambitious *Death of Hercules* and *Exhibition Gallery of the Louvre* which had failed, before he turned in the late 1830s to the promotion of his electromagnetic telegraph, complaining that the Muse of Painting had deserted him. That refined and complex spirit, Washington Allston (q.v.), whose brooding imagination had been nourished by his literary associations and by long study of Claude, Poussin, and the great Italians, labored in vain to complete a huge *Belshazzar's Feast* begun in 1817, and painted landscapes and "ideal" portraits of magical and dreamlike quality, the projections of an authentically romantic vision (PL. 103).

There was no trace of the grand style in the still-life paintings of the period, modest in scale and meticulous in execution, which embodied an affection for Whitman's "the average, the bodily, the concrete." The talent of the Peale family for describing every highlight on a bunch of grapes and every warm reflection in a peach was represented by James Peale's daughters Anna (1791-1878), Margaretta (1795-1882), and Sarah (1800-85); and to the same tradition belong John F. Francis (1808-86) and John A. Woodside (1781-1852). In spite of their tropical backgrounds, the exquisite small groups of orchids and hummingbirds by Martin J. Heade (1819-1904) had the character of still life (PL. 106.)

Nowhere better than in portraits can one trace the stylistic crosscurrents of these years when the handsome generalization competed with the plain, unmitigated record and both with a tendency to romanticize the actual. Although Stuart died in the year of Jackson's election, his influence made itself felt in the work of other men: Ezra Ames of Albany (1768-1836); Henry Sargent (1770-1845) of Boston; the Pennsylvania German Jacob Eichholtz (1776-1842); the vigorous and heavy-handed John W. Jarvis (1780-1840). The best work of James Frothingham (1786-1864) was due to Stuart's counsel; Matthew Jouett (1787/88-1827) adapted the master's technique to the taste of his Kentucky patrons.

The Stuart influence on Thomas Sully (1783-1872) was replaced by that of Thomas Lawrence in England, where Sully learned the relaxed drawing, the moist and glowing flesh tone, and the graceful evasion of detail which gave grace and sensibility to his likenesses of the actress Fanny Kemble. His charming productions (PL. 104) had many imitators: Samuel

Waldo (1783-1861), whose pupil and partner was William Jewett (1789/90-1874); Philip Tilyard (1785-1830); William West (1788-1857). Both Stuart's breadth and Sully's dash were in many portraits by John Neagle (1796-1865), the vigor of whose *Pat Lyon at the Forge* partly redeems its theatricalism; the self-portrait of Henry Inman (1801-46) had Sully's translucent shadows, and Inman's pupil William Powell (1823-79) practiced some of the Sully short cuts.

Those Americans of the middle years who could not spare the time and money for painted portraits flocked to the cutters of silhouettes and the parlors of the daguerreotypists. Among the former William J. Hubbard (1807-62) was perhaps the most skillful; among his competitors was William H. Brown (1808-83), a series of whose silhouettes were lithographed in 1846 as *Portrait Gallery of Distinguished Americans*. In the popularity of the camera-made likeness of the 1840s more than one painter saw a threat to his profession; others met the challenge by taking over some of the daguerreotype's characteristics — the stiff posture, the self-conscious stare, the glassy texture of flesh and cloth, the harsh chiaroscuro. Sooner or later, the down-to-earth spirit of so many Jacksonians would reflect itself in painting. Photography stimulated this taste for the impartially objective and the slickly finished, a taste further nourished at the mid-century by the popularity of the school of Düsseldorf, where these qualities were cultivated. When Americans saw the relentless "realism" of *Washington Crossing the Delaware* by the Düsseldorf painter Emanuel Leutze (1816-68), Stuart had begun to look quaintly old-fashioned and Sully soft. Chester Harding (1792-1866) and Nathaniel Jocelyn (1796-1881) had worked in the spirit of these older painters, but now acquired a harder texture, a sleek thoroughness in description, which better pleased their patrons. And somewhat younger men than these, whose work was done mainly in the second half of the century, had in common, despite their individual accents, a sturdy and sober naturalism: Theodore Moise (1806-83), Charles Osgood (1809-90), Cephas Giovanni Thompson (1809-88), Charles L. Elliott (1812-68), George P. A. Healy (1813-94) (PL. 104), Daniel Huntington (1816-1906), Henry P. Gray (1819-77), Thomas B. Read (1822-72), Thomas Hicks (1823-90), and Joseph O. Eaton (1829-75). Some of these men managed to combine sentimental-romantic appeal with literalism of execution, and many of them studied with profit the masters of Rome and Florence. The coloristic warmth of Francis Alexander (1800-80), first kindled by Allston, owed much to the great Italians, and so did the breadth and resonance of William Page (1811-85).

Alongside the sophisticated professionals moved a small army of men with little training, or none at all, whose naïve but expressive likenesses had meaning in the total pattern, and who generally worked for country patrons less well to do and less exacting than city people. The poorest of these so-called "primitive" works are crude, unprepossessing maps of their sitters; the best have incisive drawing, bright and unhackneyed colors, and a shrewd statement of essentials. Superior in this relative sense were the sturdy designs of Erastus Field (1805-1900), the bold color of Joseph Stock (1815-55), and the crisp, clean outlines of William Prior (1806-73), who charged one-fourth as much for a flat as for a shaded likeness. It was in the spirit of the time that several of these men, by self-improvement or with a modicum of help from others, achieved professional skill and status.

"America is a poem in our eyes," wrote Emerson; "its ample geography dazzles the imagination." That geography was set forth during the middle years with a growing sense of its sheer beauty, its moods of quiet and of storm, its normal and its grandly eccentric forms, its effect on the spirit of man, for which the all-embracing word is "romantic." The printed view flourished. Water colors by William H. Bartlett (1809-54) were engraved on steel for the two volumes of *American Scenery*; Goupil-Vibert of Paris reproduced *Views of American Cities* drawn by Augustus Köllner of Düsseldorf (b. 1813); the delightful scenes of William J. Bennett (1787-1844) were aquatinted in the 1930s. Some viewmakers fed the national pride in near places and curiosity about far ones by strict topographic truth,

while others idealized the actual. They often contributed to the "homemade" landscapes of amateurs and semiprofessionals: one Susan Whitcomb adapted a Robertson print for her odd but charming water color of Mt. Vernon, and Thomas Chambers (b. ca. 1808) imitated a Bartlett view of the Hudson while developing a style of his own. Such landscapes were often enumerations rather than compositions, with the lighting, color, and perspective of an earnest but untutored vision; but freedom to work out a way of his own gave, to cite but one instance, a style of their own to the pastures, rolling hills, white villages, and fanlike elms which the itinerant Rufus Porter (1792-1884) spread on New England walls.

Of professionals who made a specialty of landscape there were enough in the 1830s to be called in retrospect the "Hudson River school." Writers had already described that region's beauty when Thomas Doughty (1793-1856) suggested the river's quiet sheen between feathery trees (PL. 106), Robert Havell, Jr. (1793-1878) painted sailboats off West Point, and Robert Weir (1803-89) made his precise and charming studies of cloud, rock, and water. Other streams and hills appear in the careful and somber work of Alvan Fisher (1792-1863); and Asher B. Durand (1796-1886) gave up engraving to study forests with the patience of a Ruskin and to paint them in fresher greens than others had dared to use. The tawny rocks and blue-green ocean at Newport and the sun-filled valleys of the White Mountains were delicately portrayed by John Kensett (1816-72), and other harbors were the themes of Robert Salmon (ca. 1775-ca. 1842) and FitzHugh Lane (1804-65). These men struggled between old formulas and new ways of seeing, between muted colors and the brighter ones of nature, between the drawn and tinted view and the lively suggestion of the play of outdoor light, the accidents of weather, season, and the time of day. That research was continued by somewhat younger artists: Jacob Cox (1810-92), John Casilear (1811-93), John W. Hill (1812-79), whose father had aquatinted the *Hudson River Portfolio*, Russell Smith (1812-96), Régis Gignoux (1816-82), Benjamin Champney (1817-1907), Charles Lanman (1819-95), T. Worthington Whittredge (1820-1910), Jasper F. Cropsey (1823-1900), William Hart (1823-94), James M. Hart (1828-1901), and Thomas Hill (1829-1908). The most gifted and most romantic of the founders of the "school" was Thomas Cole (q.v.) (1801-48), praised by Bryant for his wild grandeur, majestic storm-capped mountains, and mighty forests untouched by the ax (PL. 105). His range encompassed the tranquil *Oxbow* and the five dramatic episodes of his *Course of Empire*, in which people looking for a moral lesson could read the story of a civilization's rise to power and its destruction through wealth and pride.

As Eastern civilization despoiled nature, the untouched grandeur of the Far West was sought. Along with the explorers, surveyors, road builders, and homemakers who pushed beyond the Mississippi went artists to sketch deserts, mountain peaks, and canyons, and to record the dress and behavior of the retreating Indian, a task that enlisted talents as diverse as those of James O. Lewis (1799-1858), Charles B. King (1785-1862), John Caspar Wild (ca. 1804-46), and Charles Wimar (1828-62). George Catlin (1796-1872) went up the Missouri in 1830 to paint redskins (PL. 107), prairie fires, and buffalo hunts for a traveling exhibition which astonished New York, London, and Paris; the sketches of Karl Bodmer (1809-93) were reproduced in the *Travels* of Prince Maximilian of Wied. Correct documentation was sometimes sacrificed to the picturesque and the sentimental when John M. Stanley (1814-72) worked from Texas to Oregon in the forties and fifties, when Alfred J. Miller (1810-74) made water colors of the Rockies, and when Seth Eastman (1808-75) illustrated Schoolcraft's volumes on the tribes.

As though mere size in a painting would help, a number of men concocted panoramas of great length, which toured American cities. John Banvard (1815-91) and Henry Lewis (1819-1904) thus caused the Mississippi to unroll before their audiences. Similar in spirit were the huge landscapes by painters who hoped, as one critic said, to express the immensity of the Great West in feet and inches. Rich Americans paid

fantastic prices for the towering canyons and mighty waterfalls of Albert Bierstadt (1830-1902), which combined magnitude of subject with overdramatic lighting and a Düsseldorf sharpness of detail (PL. 105). The Yellowstone and Grand Canyon pictures of Thomas Moran (1837-1926) owed something to Turner, and Frederick E. Church (1826-1900) was less known for his modestly scaled early Hudson River scenes than for larger works which combined the spectacular with the specific — Jamaica, Jerusalem, volcanoes and icebergs, the Alps and the Aegean. Credited with the knowledge of a "geologist and a physicist of light," Church appealed to the public's relish for the exotic and to its growing preoccupation with science. That taste encouraged Frederick Catherwood (1799-1854) to make panoramas and to sketch Mayan ruins in Yucatán and Guatemala.

Canyons and volcanoes had to compete with more ordinary objects in a democratic society, many of whose people were happy to sit, as Emerson did, "at the feet of the familiar", hence the appeal of genre painting, whose modest ambition is to show how ordinary men behave on simple and present occasions; practiced on occasion by earlier painters such as John Krimmel (1789-1821), it now produced a comprehensive record of the age. In David G. Blythe's work (1815-65) is the brawling and grimy life of Pittsburgh, grotesquely humorous in the manner of Brouwer and Ostade (PL. 107); in that of William S. Mount (1807-68), the genial warmth of Long Island farms where rustics dance on a barn floor to a fiddler's tune (PL. 107), in that of George C. Bingham (q.v.) of Missouri (1811-79), the raucous pageant of frontier politics (PL. 111) and the lives of river boatmen. Literature, not life, inspired the eccentric John Quidor (1801-81) when he limned Ichabod Crane, but the well-told anecdotes of Richard C. Woodville (1825-56) were about men who talked politics in oyster houses or read the war news from Mexico on a tavern porch. In the same vein were the domestic sentimentalities of Francis Edmonds (1806-63), the California mining scenes of Albertus Browere (1814-87), the rural types of Enoch Perry (1831-1915), the droll humors of Charles Deas (1818-67), and the patriotic *Spirit of Seventy-six* by Tompkins Matteson (1813-84).

Thousands of Americans knew Mount's *Bargaining for a Horse* through the print distributed by the American Art-Union, likewise the *Jolly Flatboatmen* of Bingham. When the Union was closed in 1852 as a violator of the lottery laws, commercial lithographic firms took over the task of supplying genre pictures of all kinds: rustic, patriotic, domestic, satirical. The formal partnership of Nathaniel Currier and James Ives began in 1857 and kept a host of artists busy in their special fields (PL. 107): Fanny Palmer (ca. 1812-76), James Butterworth (1817-94) with yachting scenes, William T. Ranney (1813-57) with frontier scouts and covered wagons, Arthur F. Tait (1819-1905) with hunters and fishermen. George H. Durrie (1820-63) supplied those farmhouses and snow-laden trees under gray December skies which made him a Whittier in paint, and Louis Maurer (1832-1932) specialized in sleek race horses. Among competing firms were Sarony and Major, Endicott, the Kelloggs, and Prang. The appealing children and dogs of Lily M. Spencer (1822-1902) and the jolly Negroes of William S. Mount were lithographed in Paris by Goupil.

Closely related to genre were the illustrations in those books and magazines which multiplied in the middle years. With the name of *Keepsake*, *Token*, or *Galaxy*, the gilt-bound books on parlor tables held delicate vignettes engraved from the work of some leading painters of the day. Augustus Hoppin (1828-96) specialized in humorous illustrations for books; the crisp touch of Felix O. Darley (1822-88) was not wholly betrayed by the engraver in his re-creations of scenes from Cooper, Irving, and Dickens; before John G. Chapman (1808-89) made his second trip to Europe he designed 1,400 plates for Harper's Great Bible of 1846. Other men worked for such pictorial weeklies of the 1850s as *Gleason's Pictorial*, *Leslie's*, and *Harper's Weekly*, some of which survived competition to produce their best wood engravings after the Civil War.

The genre motive was also to be seen in those efforts of the unskilled to mark the occasions of everyday life — people

gathered for quilting parties, skating on country ponds, or mourning at the grave of a relative under weeping willows. Whether on canvas, paper, or silk, these images were usually made by individuals for their own satisfaction or the pleasure of their families, and were not always inspired by esthetic motives. The scribe, for example, who daintily drew the flowers and joined hands of a Pennsylvania German couple was practicing the ancient craft of *fraktur* to celebrate an important occasion; and it was piety which produced Ann Johnson's *Baptism of Our Saviour* (*sic*) among patiently drawn but impossible palm trees. When Edward Hicks (1780-1849) applied his sign painter's technique in *The Farm of David Twining*, that neat and well-ordered rendering of barns, fences, cows, hens, and sheep was intended as a tribute to the Quaker couple who had been his foster parents. Hicks believed that farming was a more Christian occupation than painting, and it was his stubborn belief in peace among men that gave monumental dignity to the many versions of his allegory of the Biblical lion and lamb, *The Peaceable Kingdom* (PL. 107).

By 1850 it was clear that Düsseldorf, Rome, and Florence, on the one hand, and Paris, on the other, made conflicting claims on the minds of the more venturesome American artists in Europe. Some of them discovered in the directness, the fresh and unforced approach of Thomas Couture an alternative to the hard niceties they had acquired in Germany; the *Yankee Peddler* of John W. Ehninger (1827-89) shows that relaxing influence, and to some degree the work of Thomas S. Noble (1835-1907). A friend of Leutze in Düsseldorf, Eastman Johnson (1824-1906) developed, after a French sojourn and a look at Vermeer and Rembrandt in The Hague, a broader method for evoking light, although he reverted now and then to the harder style. Another pupil of Couture, Robert Newman (see below), was moved by the shimmering colors of Diaz and Monticelli to work out a glowing style of his own. Wyatt Eaton (1849-96) was a disciple of Millet at Barbizon; but the most ardent champion of the peasant painter was William Morris Hunt (1824-79). After a year in Düsseldorf and another with Couture, Hunt became a neighbor and friend of Millet at Barbizon, bought *The Sower*, and came home in 1855 with something of the French master's sense of solid form and breadth of handling. Hunt urged his Boston pupils to "look for the big things first"; and his *Bathers* challenged the niggling brushwork of the time by its monumental simplicity; his *Francis Gardner* was a rugged and masterly characterization of the sitter.

Another example for Americans was the fresh view of nature in Daubigny, Rousseau, and Corot, whose ways of suggesting dense foliage masses, the quick play of light over and through trees, the color variations of season and weather, were not lost upon George Inness (q.v.). Inness's early landscapes looked backward to Cole and Doughty; he had already seen Europe when his *Lackawanna Valley* of 1855 showed progress toward an expression of his own. The cautious browns, the compositional clichés were discarded, and light began to flood his valleys and meadows. *Peace and Plenty*, of 1865, both in title and in style, announced a new era.

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Oliver W. LARKIN

c. 1865 to the *Armory Show*. The United States after the Civil War entered on a new epoch of material expansion and power. Increasing wealth and leisure, and widening international contacts, brought a new awareness of art. The comparatively simple provincial art world of earlier years gave way to a more cosmopolitan one. The new millionaires began forming the first great collections. Contemporary European art was imported in increasing quantities — chiefly the fashionable academicians, but with a leavening of independents such as the Barbizon painters. Museums and art schools were founded. Art magazines appeared and disappeared; periodicals devoted more space to art. More students than ever before flocked to the art schools. European study became more customary, and at an earlier age. The center of attraction began to shift from Rome, Düsseldorf, or London to Paris. Women art students became more numerous; and though comparatively few persevered as professionals, the feminine influence in American art became a force to be reckoned with.

In response to the new expansiveness and ostentation appeared the grandiose products of the later Hudson River school and the enormous panoramas of Bierstadt, F. E. Church, and Thomas Moran. The homespun genre school continued its even course. The official art world continued to be ruled by academic artists to whom even Corot was still a revolutionary.

But while the period saw the culmination of the grandiose tendencies of American landscape, it also saw the development of a new concept of landscape in the mature work of George Inness and that of his younger contemporaries Homer D. Martin and Alexander H. Wyant. On all three the Barbizon influence, especially that of Corot, was decisive. The old romantic cult of the wilderness gave way to a preference for pastoral and cultivated landscape, the old panoramic viewpoint to a new intimacy, the old literal naturalism to a new subjectivity; nature was conceived of as a being whose changing moods were shared by man. The earlier meticulous, detailed style was replaced by broad simplification, with a new emphasis on color.

Inness's mature work was equally a record of nature's evanescent moods and an expression of subjective emotion. Changing effects of light, weather, season, and time of day absorbed him more and more (PL. 109). He had never been a strong structural painter, and as he grew older color and tone became the dominant elements in his work. His latest style had parallels with impressionism, in a darker, more romantic vein. Its emotionalism sometimes lapsed into sentimentality; Inness might be called the Longfellow of landscape. Nevertheless he remained the most versatile, vital, and influential American landscapist of his period; he was the pioneer of a new landscape school.

A similar evolution was followed by Inness's colleagues Alexander H. Wyant (1836-92) and Homer D. Martin (1836-97). Wyant, brought up in Ohio without artistic contacts, as a young man saw pictures by Inness and came to New York to consult him. His early work was directly in the Hudson River tradition, but he developed a more intimate style, relying on tonal effects of light and air, in a quiet key of silvery grays and gray-greens. Lacking Inness's emotional freedom, Wyant remained close to a naturalistic vision.

Homer Martin, born in Albany, N.Y., almost entirely self-taught, spent his youth and young-manhood among the Adirondacks and the Catskills, which he began to paint with a literal naturalism like that of the Hudson River school. But from the first he was free from their grandiloquence, and revealed a sensitiveness and an intensity of mood that made his early landscapes among the most authentic interpretations of the American wilderness. Of contemplative temperament, independent and not easily influenced, his development was slow but consistent. Not until he was almost 30 did he leave Albany; not until he was 40 did he go abroad and fully discover the Barbizon school. The years 1882 to 1886 he spent in France, mostly in Normandy. Even more than the Barbizon influence, the northern French landscape assisted his growth from literalism to an intimate poetic style.

The keynote of Martin's work, like that of many early American landscapists, was solitude. His landscapes are filled with a sense of great space, subdued but pervading light, silence, and serene melancholy. His art, more objective and reserved than Inness's, was also an expression of personal emotion, but more penetrating. He had a feeling for the structure of the earth, that Inness lacked. His color, at first somber, gained resonance and luminosity with the years and, toward the last, a freedom that suggests a dark variety of impressionism. A conscious designer, in his maturity he used form and color to create compositions analogous to those of music.

The native genre tradition initiated by Mount and his contemporaries reached its culmination after 1865 in the early works of Winslow Homer and Thomas Eakins (qq.v.), the two leading American representatives of the naturalistic movement. Compared to their predecessors they were more mature artists, more realistic, wider in range, deeper in emotional content. Homer, almost entirely self-taught, not visiting Europe until he was 30, built his art on direct observation of nature. As a young man he pictured country life with primitive freshness and reserved lyricism. His bold, naïve recording of outdoor light and color curiously paralleled the early style of the French impressionists, but without direct influence, since it appeared simultaneously, and before his European visit.

In middle life Homer turned his back on civilization, settling in a lonely spot on the coast of Maine. Here he devoted himself to the elemental in nature — the sea, the forest, the mountains, and the lives of woodsmen (PL. 110), fishermen, and sailors, becoming the closest artistic counterpart to Walt Whitman. His stormy, dramatic marines were supreme expressions of the power and dangerous beauty of the sea; his brilliant watercolors effected a revolution in that medium. Although a pure naturalist in his philosophy, his mature work gives evidence of conscious design in its linear rhythms, earthy color harmonies, and decorative values.

By contrast with Homer, Eakins depicted the ordinary middle-class city life of the United States in the late 19th century. His training, unlike Homer's, was long and thorough, including three years in Paris at the Ecole des Beaux-Arts. Except for this, Eakins lived his whole life in the same city, Philadelphia, and even in the same house. All his subject matter came from his community. His scientific leanings — he was a mathematician, a thorough anatomist, and the leading American art teacher of his day — were combined with a fundamentally sensuous apprehension of reality that made him the strongest American figure painter of his time. His art was built on form; it was realized completely in three dimensions.

Because of various personal frustrations, Eakins in middle life abandoned the broader genre subjects of his early years and concentrated on portraiture (PL. 112). His portraits have

a power and intensity of character, a penetrating insight, and an inner vitality that make his fashionable contemporaries seem superficial. Incapable of flattery, he was a complete failure in a worldly sense. But his mature portraiture, the most solid and revealing pictorial record of the America of his period, equals Copley's record of colonial America. He was the first mature artist to accept completely the realities of American life, and to create his art out of them. Within naturalistic limits and within the confines of portraiture, he was the strongest plastic constructor in 19th-century American painting.

The early native genre tradition was still carried on by older artists such as T. W. Wood and by a few younger men like J. G. Brown (1831-1913) and E. L. Henry (1841-1919). In their concentration on rural life, their anecdotalism, and their sentimental nostalgia for the past, they represented a survival rather than a new departure as Homer and Eakins did. The sole exception was Eastman Johnson, who outgrew his earlier tight literalism to develop an art based on solid naturalism but increasingly concerned with light, visual effects, and mood. Johnson's later work had the flavor and humor of Mount and Bingham, but added a freshness close to Homer's.

An intriguing side current of naturalism was the *trompe-l'œil* still life which flourished in the last third of the century. Its leading exponent, William M. Harnett (1848-92), who was born in Philadelphia and who had spent four years in Munich in his thirties, carried the Peale still-life tradition to new levels of imaginative content and technical skill. To the immaculate perfection of *trompe-l'œil* vision, with its crystalline clarity, meticulous detail, and deceptive roundness and depth, he added a severe purity of style and a sense of design that raised his art above the average of the school (PL. 108). His chief follower was John F. Peto (1854-1907), also of Philadelphia, who however differed markedly in his preoccupation with objects that were used, worn, or discarded, in his humor and poignant sense of mood, and in his concern with the drama of light. Other exponents of *trompe-l'œil* carried even further its aspects of fantasy and tour de force, notably John Haberle (1856-1933) and Edwin Romanzo Elmer (1850-1923).

At the opposite extreme from naturalism, but no less characteristic of the American temperament, was the dark subjective romanticism which had begun with Allston. It had appeared in Hunt, Inness, and Martin, allied with the Barbizon influence and with a style more painterly and chromatic than the literalism of the Hudson River school. In a more homespun fashion, it manifested itself in George Fuller (1822-84), who in the isolation of his Massachusetts farm evolved a highly personal art in which evocative figures of country women inhabited a shadowy, autumnal world, saved from sentimentality by a sense of their relation to the earth. Though technically awkward, Fuller had an innate sensitivity to tone and atmospheric envelopment. More consciously in the romantic tradition was Robert Loftin Newman (1827-1912), who, after studying briefly with Couture in Paris, was introduced by Hunt to Millet in 1854 and spent some months in Barbizon. His Biblical and legendary subjects were interpreted with a romantic subjectivism that shunned the specific and concentrated on the essential actors and actions. His style, reminiscent of Delacroix and Diaz, was summary, sometimes fragmentary, but captured the central forms and movements in rich color.

But the most original romantic of the time was Albert P. Ryder (q.v.). Growing up in the whaling port of New Bedford, throughout his life he was haunted by the sea. He was practically self-taught, and his few brief visits to Europe were made after his style was formed, and had no effect on it. Ryder was a pure visionary; his art had little direct relation to external actualities. He pictured a world of legend, of religion, of imagined landscape. Often he drew on literature, especially Shakespeare. But he was never a "literary" artist in the usual sense; these themes were transformed by a personal alchemy into images of intense, haunting reality (PL. 109). Though his art lacked the tremendous range of a Delacroix, it had the integrity of inner vision, the unconsciousness and the belief, of the great age of romanticism, of which he was a true if belated representative.

Ryder's style was as personal as his content. He used nature far more freely than any American of his time, making her obey the rhythms of his instinctive plastic sense. His art had a freedom and originality of form, a sense of rhythmic movement, a feeling for the total harmony of the work, and a completeness of design that place him among the purest plastic creators of his period in any country. It was curiously prophetic of certain tendencies of the 20th century — the discovery of the subconscious mind, the revolt against literal naturalism, the freedom of plastic creation.

Closely allied to Ryder was his contemporary Ralph A. Blakelock (1847-1919). As Ryder was haunted by the sea, so Blakelock was haunted by the forest, by primeval America with its Indians. His obsession with the wilderness, which had marked the Hudson River school, took a less literal form. Blakelock did not have Ryder's full imaginative range; he was primarily a landscapist, and more naturalistic in style. Like Ryder, he loved night and moonlight, and he used them to create a simple unity of tone and color, to drop veils between foreground and distance, to silhouette arabesques of foliage against sky. More decorative than plastic, his paintings are patterns of receding planes. Utterly impractical in worldly matters, Blakelock was driven insane by neglect and poverty. His tragic fate hindered the full realization of his gifts.

Homer and Eakins, Ryder and Blakelock, like their predecessors of the early portrait, genre, and landscape schools, lived most of their lives in the United States, and built their art out of American life or out of the inner life of the mind. As was true of some of the strongest American painters of the 19th century, they had little connection with current European movements, in relation to which they were anachronistic. Yet they were among the most creative American artists of their time. The development of American art through the century can be seen in terms of two forces: native creativity, often provincial and limited, but making its solid original contribution; and more sophisticated influences from abroad, contributing the necessary leaven of knowledge and new concepts. Through the interaction of these two forces, American art gradually evolved toward maturity.

John La Farge (1835-1910) played an important role in transmitting foreign influences. He was born in New York of a French family long resident in the United States but with close connections in France. A student of the old masters, the French romantics, and Oriental art, a critic, pioneer muralist, and reviver of the medieval art of stained glass, La Farge was the most cultivated American artist of his generation and exercised a wide influence on his fellow artists. His painting style was based on the tradition of the Venetians and Delacroix — but tradition more thoroughly understood and assimilated than by most of his contemporaries. Color played a leading part, its romantic richness modified by exotic notes from the Far East. An early preoccupation with problems of light showed in his subtle awareness of the infinite modulations of outdoor color, in which he anticipated impressionism. His lifelong interest in Oriental art produced a conscious decorative intent, especially in his fine water colors. In the late 1880s and early 1890s he made two long visits to Japan and the South Pacific islands, and became one of the first Occidental artists to discover the earthly paradises of Tahiti and Samoa (PL. 109). Although La Farge was an intelligent, sensitive traditionalist rather than a powerful creative artist, his art and mind played an important part in the development of his country's artistic maturity.

For all his internationalism, La Farge was identified with the United States. But as American culture became more cosmopolitan, certain artists spent most of their lives abroad — among them Whistler, Sargent, and Mary Cassatt. The first two, indeed, are considered in England as of the British school. But all three came of American ancestry; two — Sargent and Cassatt — visited the United States frequently; and all retained certain American characteristics and had a strong influence in the United States. (All three are listed as Americans in United States publications and collections.)

James A. McNeill Whistler (q.v.), who spent his young-manhood in Paris and the rest of his life in London, was the

complete cosmopolite. From his friends Courbet and Degas he imbibed the naturalism of mid-century France, a horror of so-called "literary" subject matter, an interest in the contemporary scene, especially the city. But Whistler's naturalism was modified by estheticism and by his admiration for Japanese art and for Velázquez and Goya. A conscious and articulate theorist, he saw clearly that art is not imitation of nature, but its transformation into a work that lives by its intrinsic qualities of design. So he painted contemporary life, but in a highly selective style. The subject became the motif for an arrangement almost as abstract as music. Whistler's gift was less structural than decorative, an innate sensitivity to tonal, chromatic, and spatial relations. He cared above all for the total harmony of the picture, to achieve which he eliminated details, muted his color, and dropped veils of silvery grays over the whole — just as twilight and night (his favorite hours) mute and unify the visible world (PL. 110). His art lacked the vitality of Velázquez and Goya, Manet and Degas. But within its voluntary limits everything in it was essential, pure, and exquisitely right. Through his work and his utterances Whistler helped purify painting of everything that was not art. His innovations marked a step in the evolution of 19th-century painting from naturalism toward the abstractionism of the 20th century. In the English-speaking world his art and ideas, though met with ridicule and abuse, had a wide and salutary effect.

In the 1870s Munich rivaled Paris as a center for American students. Here the naturalistic movement led by Wilhelm Leibl, reacting against academic pseudoclassicism, had returned to direct observation and direct painting, in the tradition of Hals and Velázquez. It was a limited discipline, concentrated on picturing the model with a fresh eye, a skillful hand, and a fully loaded brush. The chief Americans who partook of it were Walter Shirlaw (1838–1909), J. Frank Currier (1843–1909), Frank Duveneck (1848–1919), and William M. Chase (1849–1916). The most gifted of these was Duveneck, in whose hands the new technique became a thing of beauty, a source of sensuous enjoyment (PL. 108). But the vitality of his work was short-lived; after his return to America in the 1880s his art degenerated sadly.

Of all the Munich group, Chase made the most solid contribution. Not confining himself to the brown style of Munich, he ranged from Whistlerian decorativeness to the open-air gamut of impressionism. He painted many aspects of the contemporary American scene, indoors and outdoors, with zest, charm, and fresh eye. As painter, teacher, and personality, he was for years a leading figure in the American art world.

The most brilliant exponent of direct painting was John Singer Sargent (q.v.). As complete a cosmopolite as Whistler, he received a thorough Parisian academic training under Carolus-Duran, settled in London at 28, and soon had an international reputation. At the height of his career he was the most sought-after portraitist in the Anglo-Saxon world, with a waiting list of the great and wealthy. An inheritor of the worldly tradition of the British portrait school, enjoying the spectacle of beautiful and fashionable women, stylish clothes, and luxurious settings, Sargent knew how to extract from all this the maximum pictorial effect (PL. 108). The central fact in his art was his extraordinary skill with the brush. In the bravura method of direct painting few artists in history have been more adept. His brushwork was a virtuoso performance and, like that of a brilliant pianist, gives its own kind of enjoyment. On the other hand, one seldom feels much human warmth in his portraits. His gift was for characterization more than for character; for recording the sitter's salient traits accurately and vividly rather than for realizing the formal structure of head and body. His work, deficient in substance and plasticity, was concerned with what meets the eye, not with the inner life of forms.

Sargent's brilliant visual naturalism and his mastery of the slashing brush had a wide effect on American painting. Perhaps the most conspicuous exponent of the style was William M. Chase, a less sophisticated but more sympathetic and varied artist. Chase painted many aspects of the contemporary American scene, indoors and outdoors, with zest, charm, and a fresh

eye (PL. 108). His records of American society in the 1890s, combining idyllicism and keen observation, were worthy successors to Winslow Homer's similar works 30 years earlier.

The influence of French impressionism was slow in reaching the United States, though an early member of the movement had been the American Mary Cassatt (q.v.), who had settled in France in her early twenties, become a friend of Degas, and at his invitation exhibited with the impressionist group from 1879 on. Mary Cassatt, however, was never an orthodox impressionist. The influence of Degas, with his insistence on precise draftsmanship, outweighed the impressionist tendency to dissolve forms in light and atmosphere (PL. 110). There was something characteristically American in her continued adherence to naturalism, her clarity and sharpness of vision, and her technical competence. There was also something very American in the simplicity and wholesomeness of her favorite subjects, women and children.

In the United States there had been several native precursors of impressionism, such as Winslow Homer and John La Farge. But the actual French movement, though fully developed by 1870, had little direct influence until fifteen or twenty years later. (There was a similar lag in the Barbizon influence.) The four pioneers of American impressionism — Robinson, Twachtman, Weir, and Hassam — came to the movement gradually and by different paths. The earliest, Theodore Robinson (1852–96), had gone to Paris in 1877, but it was not until he returned in 1884 that he discovered Monet and moved to Giverny, working under the master's direct influence. His dependence on Monet is obvious in his high-keyed palette and divided tones, but he was a sensitive artist who saw nature directly, with a fresh clear eye.

John H. Twachtman (1853–1902), who studied in Munich with Duveneck in the 1870s, showed a sensitivity quite different from the usual hard-hitting Munich students. The impressionistic style he had developed by the middle 1880s, to which personal growth contributed as much as external influences, was as close to Whistler as to Monet. A lyrical artist, delicate and wayward, he loved the fluid and evanescent in nature — flowing water, the tender hues of early spring, snow with its creation of a subtle white and gray world (PL. 110). Twachtman's art was freer from mere naturalism than that of his colleagues; it was a pure expression of emotion through color, line, and pattern, a sort of visual music. With all his seeming vagueness, the patterns he created were clear and formed — thus he was closer to neoimpressionism than to impressionism.

J. Alden Weir (1852–1919), who studied in Paris as early as 1873, for many years worked in a dark key, gradually evolving toward outdoor light and higher color, until about 1890 he definitely espoused impressionism. With him the change was not so much in viewpoint as in palette and technique. His developed style revealed the same quiet pleasant idyllicism that had marked his work from the first, but now transposed into a higher key, muted and silvery, avoiding the full chromatic brilliancy of the new school.

The most orthodox of the four was the youngest, Childe Hassam (1859–1935), the only one who habitually recorded the full effect of sunlight and used the impressionist technique of divided colors. His work, however, always retained a definitely native flavor — an American, indeed a New England, version of impressionism. His favorite subject was the New England seacoast with its summer resorts and trim old villages with white-painted houses and churches. These scenes he painted in a style combining the new discoveries of light and color with naturalistic observation, fresh and pleasant if sometimes tending toward oversweetness.

At the turn of the century, the American art world was dominated by academicism. The 19th-century leaders were either dead or old men. Most of the new generation, products of a period of growing cosmopolitanism, studied in Europe as a matter of course, usually in Paris, and in the academic schools. Aside from Beaux-Arts discipline, the chief influences on them were Whistler's estheticism, Sargent's visual naturalism, and French impressionism. Of any European movements since impressionism they were oblivious. Returning to their native

land, they combined these influences with American sentiment to produce a characteristically American brand of academicism.

The outstanding features of this academic art were idealism in subject matter and viewpoint, naturalism in style, and manual skill in technique. This was the heyday of the cult of the American woman, pictured in boudoir, drawing room, or garden, always charming and decorative, and always shown in "conspicuous leisure"; of outdoor idylls of sunlight and youth and the summer vacation; of sheltered middle-class homes with their angelic children; of American girls masquerading as allegorical figures of purity and innocence. In spite of its preoccupation with the feminine, one of the outstanding characteristics of this art was its sexlessness. The world pictured was that of the American middle class as it would like to see itself.

The academic painters drew most of their subjects from the life of the middle and upper classes. They ignored the crude realities of the American scene: industry, commerce, transportation, the workaday world of the farmer and laborer, the life of the masses. Their work contained no hint of social comment or satire, or indeed any form of humor. They seldom pictured city life, and then only its fashionable side. The landscapists selected the idyllic aspects of the American countryside, avoiding evidences of urbanism and industrialism — man-made features of the American scene.

Among the painters who can be said to represent the school at its best were Abbott H. Thayer (1849-1922) with his wholesome vigor and largeness; Thomas W. Dewing (1851-1938) with his refined, etherealized poetry of femininity; George de Forest Brush (1855-1941), whose perennial mother-and-child compositions compare favorably with the English Pre-Raphaelites; Frank W. Benson (1862-1951) and Edmund Charles Tarbell (1862-1938) with their pleasant scenes from New England home life; and Robert Frederick Blum (1857-1903), a brilliant exponent of brushwork and visual naturalism whose early death cut short a promising career.

This was the golden age of academic mural painting. The Federal government had given practically no recognition to mural art since the completion of the decorations in the Capitol in Washington, and the first important mural project was initiated not by the government but by the architect Henry H. Richardson when he commissioned John La Farge to decorate Trinity Church, Boston, in 1876. La Farge's numerous subsequent murals — learned adaptations of the Venetian monumental style, but infused with his individual poetic imagination — are still the most distinguished examples of the type produced in the United States. In 1878, again partly through Richardson, William Morris Hunt painted two murals in the New York State Capitol in Albany. Allied to French romanticism, especially to Couture, these were among Hunt's finest achievements. Unfortunately, owing to architectural alterations, they are no longer visible.

By the 1890s growing national wealth, ostentation, and cultural consciousness brought a wide public-building program that spread Beaux-Arts classicism throughout the land. For the buildings of the Chicago World's Fair of 1893 more mural paintings were executed than in the entire nation since its beginnings. The Fair ushered in a new era for the mural painter. The first extensive Federal mural project was in the new Library of Congress in Washington, completed in the late 1890s. For three decades thereafter, up to the depression of the 1930s, mural painting flourished, supported by Federal, state, and local governments, and by private interests.

Practically all of it was academic in content, viewpoint, and style. It embodied blameless civic ideals expressed in pseudo-classic symbology, again celebrating American womanhood. In the beginning the style was often that of easel paintings enlarged out of proportion to their plastic qualities and design. But as time passed, a more professional school of muralists emerged, notably Edwin H. Blashfield (1848-1936) and Kenyon Cox (1856-1919), who though academic had an understanding of the requirements of their craft. Of painters who were not exclusively muralists, Elihu Vedder (1836-1923) had a severity, a linear clarity, and a decorative sense that made his murals among the most effective; and Abbott Thayer's ample style was

well adapted to mural art. Sargent's murals in the Boston Public Library were a rather turgid combination of illustration and archaeology, but his later extensive decorations in the Boston Museum of Fine Arts, though bordering on the saccharine, revealed an unexpected inventiveness, airiness, and grace.

In the prevailing academic atmosphere the independent voices were few. One of the most original was Louis M. Eilschmius (1864-1941), naïve poet of nature and dreamlike idylls, whose captivating simplicity and freshness were completely ignored by his contemporaries. Through years of neglect Eilschmius evolved an art of pure fantasy, often tragic and violent, whose genuine merits were not recognized until the advent of modernism (See Pl. 110.)

About 1905 the academic domination of the American art world was challenged by a group of young realists: Robert Henri (1865-1929), George Luks (1867-1933), William J. Glackens (1870-1938), John Sloan (1871-1951), and Everett Shinn (1873-1951). All Philadelphians and students of the Pennsylvania Academy, they were close friends. All except Henri were originally newspaper artists, associated especially with the *Philadelphia Press*. Their leader was Henri, oldest of the group, vital and magnetic and a born teacher. He encouraged them to graduate from newspaper work to painting, to look at the life around them, and to study the 17th-century realists, Velázquez, Hals, and Rembrandt, and their modern descendants, Goya, Daumier, and Manet.

Rebelling against academic idealism, the Henri group turned to the life of the modern city (at first Philadelphia, later New York, where they all settled). They loved the city as their 19th-century predecessors of the genre school had loved the country, and they painted it with honesty, warmth, and humor. They were drawn to the masses more than to the upper classes, and pictured the slums as often as Fifth Avenue. They had a social conscience, a relish for the life of the people, and a satirical humor that were new in American painting, although not in graphic art.

All of them were in conscious revolt against impressionism — or rather, what impressionism had become in the United States. The style of their early work — broad, essentially graphic, dark in palette, with prevailing grays, browns, and blacks — was a reaction against impressionism and a return to what they felt was the truer realistic tradition of Velázquez, Goya, and the early Manet. Far from advanced in style, untouched by current movements abroad, they were radical in America because of their subject matter and viewpoint. At this time they were not yet aware of the more creative aspects of impressionism, the mature work of Renoir and Cézanne; if they had been, they would hardly have returned to the dark naturalism out of which these masters themselves had grown. In later years Glackens and Sloan, in particular, produced an art that reflected postimpressionist developments: the former in a Renoirlike luxuriance of color, the latter in an insistence on plastic form (Pl. 113).

The Henri group played an important part in replacing academicism with a more robust interest in contemporary American life. In their struggle against academic domination of the art world and for independent art, the group found an able ally in Arthur B. Davies (1862-1928), a romantic painter whose allegorical poetry continued the tradition of Ryder in a more sophisticated style (Pl. 113). A cultivated intelligence, aware of new trends, dedicated to the principle of artistic independence, Davies was to play a quiet but effective role in promoting the modernist cause and the growth of American collections of modern art.

In 1908 the five realists of the Henri group joined with Davies, the pioneer modernist Maurice Prendergast, and the impressionist Ernest Lawson to form a group called "The Eight," whose exhibition that year created a furor. Although never again exhibiting as a group, individual members, especially Henri, Davies, Sloan, and Glackens, were to be leaders in the battle for independent art. They welcomed the new modern movement beginning to reach the United States and, in alliance with its leaders and other progressives, played an

important part in staging the revolutionary Armory Show of 1913 and in founding the Society of Independent Artists in 1917. Through both their art and their activities on behalf of artistic freedom, they effected a revolution from which all subsequent American art benefited.

In graphic art the post-Civil War period saw the decline of the popular color print, due largely to competition with photography, and the rise of the print designed as a work of art. Here Whistler's example was decisive. His prints, more naturalistic than his paintings, reveal his feeling for the flavor of cities — their low rather than their high life. Executed with all his artistry, they present a paradoxical combination of common subjects and refinement of style. Nowhere are his delicate precision, the sensitivity of his line, and the justness of his design more in evidence. His influence as the leading print maker of the Anglo-Saxon world became predominant in the United States. But it was not altogether a fortunate influence. The new Whistlerian school, concentrating on technical refinements, was extremely limited in subject matter; it dwelt on the antiquarian and architectural aspects of Europe and ignored the American scene or any element of humanity. The most vital of the school was Joseph Pennell (1860–1926), Whistler's friend, disciple, and biographer, whose interests extended beyond the archaeological to the contemporary world — industry, the new skyscrapers, the Panama Canal; he was an energetic and versatile craftsman, though a less sensitive artist than Whistler.

A few painters made individual graphic contributions: Homer in eight etchings marked by his usual largeness of style, Mary Cassatt in her charming color etchings with their frank debt to the Japanese; Davies in his imaginative aquatints and lithographs. But, by and large, print making remained a rather arid field until revitalized by new forces in the early 20th century.

By contrast, illustration expanded enormously. In illustrated magazines such as *Harper's Weekly* and *Leslie's Weekly*, wood-engraved pictures fulfilled the function of pictorial reporting now accomplished by camera and halftone. The Civil War was the most fully pictured conflict so far, its most gifted recorder being young Winslow Homer. Through the following decade Homer drew illustrations of country life which in their graphic strength and decorative qualities were among his best works. This native tradition was carried on by A. B. Frost (1851–1928), who ranged from naturalism to a rich graphic humor, and by Frederic Remington (1861–1900), who from firsthand experience of the Wild West of postpioneer days produced realistic illustrations and paintings, packed with action and drama, authentic as pictorial records if not distinguished as art.

A more cosmopolitan kind of illustrations, more concerned with reconstruction of the past, was practiced by Edwin A. Abbey (1852–1911), whose sure draftsmanship and neat composition appeared to better advantage on the printed page than in his paintings and murals, and by Howard Pyle (1853–1911), who from William Morris and 15th-century German woodcuts learned to design book illustrations rich in ornamentation, effective in pattern, and harmonious with type.

Upper-class contemporary American society was the world of Charles Dana Gibson (1867–1944), creator of that epitome of ideal American womanhood, the Gibson girl. An accomplished draftsman in the *Punch* tradition, Gibson created an image of a new American aristocracy, moneyed, perfectly groomed, physically flawless. Like Sargent, he left an unequaled document of the upper classes as they liked to imagine themselves and occasionally were. He set the tone for genteel illustration from the 1890s to the 1930s, the heyday of the pretty girl and the handsome boy, repeated ad infinitum and ad nauseam. A few other individuals stand out: Robert F. Blum for his Fortunyluke dash, Edward Penfield (1866–1925) for his pleasant decorative gift, and Oliver Herford (1863–1935) for his graphic wit.

A richer creativity appeared in political cartooning and popular humor. The father of the modern American cartoon was Thomas Nast (1840–1902), for 25 years cartoonist of *Harper's Weekly*. The postwar period with its violent issues and

corruption gave full scope to his genius. A formidable fighter, devastating in ridicule, he had the cartoonist's special gift of presenting abstract situations in concrete imagery (PL. 114), and he invented or gave currency to many symbols familiar ever since, such as the Democratic donkey and the Republican elephant. He transformed the cartoon from an overdetalled, overlabeled picture to a simple, powerful graphic image. At the height of his career he exercised a wider popular influence than any American cartoonist before or since. His massive form and rich design rank him among the leading American artists in any field.

A more Continental type of graphic humor was introduced by Joseph Keppler (1838–94), born in Vienna, who came to the United States in 1868 and founded the weekly *Puck* in 1877. Where the older magazines had been related to the British illustrated press, *Puck* stemmed from German periodicals such as *Fliegende Blätter*. For black-and-white wood engraving it substituted color lithography. Keppler himself, while less powerful than Nast, displayed caricatural skill and a ribald humor. *Puck* soon became the most popular humorous magazine and attracted some of the best talent.

Out of *Puck* and its rival *Judge* (founded 1881) grew the graphic art of the daily newspapers — the political cartoon and the comic strip. Up to the middle 1890s few dailies had carried illustrations, but from then on they superseded the weeklies in the cartoon field. As to the comic strip, traceable to Wilhelm Busch in Germany, many of its American pioneers were also of German origin, and their slapstick humor and graphic grotesqueness were definitely Teutonic. First appearing in the middle 1890s, the comics soon became by far the most popular art form in the United States. Trash predominated, but there were a few genuine graphic artists, notably the inimitable George Herriman (1880–1944), creator of Krazy Kat. From the comic strip was to evolve the new 20th-century art of the animated film cartoon.

Although the vast mass of popular graphic art had no lasting value, it nevertheless included some of the liveliest creation of the period, with qualities of inventiveness, humor, and graphic freedom which were sadly lacking in "serious" painting and print making.

In the first decade of the new century, the prevailing gentility of polite illustration and print making was rudely disturbed by the young iconoclasts of the Henri group. In particular, Glackens's witty illustrations and Sloan's strong, racy etchings of city life introduced a new realism, humor, and humanity, forecasting the later graphic achievements of Bellows, Hopper, Marsh, and others (PL. 114). In 1912 Sloan with other artists and writers took over *The Masses*, a Socialist monthly, and turned it into the most vital illustrated magazine of the time. Sloan contributed some of his best drawings: Art Young (1866–1943) continued the Nast tradition in cartoons of massive power and impact (PL. 114); and the younger contributors included Bellows, Stuart Davis, Glenn O. Coleman, and Boardman Robinson. *The Masses* scrapped long captions, let the picture tell its own story, and introduced a new frankness and boldness — innovations that have had a lasting effect on subsequent illustration. Thus in graphic art as in painting the Henri group and their younger allies helped inaugurate a new freedom.

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Lloyd GOODRICH

d. The Armory Show to the mid-20th century. Pioneers of Modernism. American painting at the opening of the 20th century was provincial and self-satisfied, a combination of impressionism and sentiment. In the late 1890s a few young Americans in Paris became involved with the activities which exploded in 1905 in the work of the Fauves. Prendergast, Maurer, Halpert, Sterne, Weber, and Walkowitz were all in Paris during these pioneering years, and were soon followed by others. A smaller group felt urgent new developments in Italy (Stella) and in Germany (Hartley). However, the academicians were in full control in the United States, and opportunities for seeing or exhibiting progressive works were almost nonexistent. The only liberal group in the early years of the century was "The Eight," and they were innovators only in that they felt a lively interest in the world about them, not in any technical or formal sense. The American "modernists" were influenced, on the one hand, by Cézanne and the sense of structural organization and, on the other, by the excitement and expressive color of the Fauves. The more limited influence of futurism and Orphism was also felt in individual cases.

Maurice Prendergast (1859-1924) was one of the first American painters to think of the picture as primarily a total artistic form. His paintings, which deal with groups of pleasure seekers wandering along park paths or represent seashore and woods, handle these subjects impressionistically, with a new feeling for compact form and expressive color (PL. 116). Prendergast was probably the first American artist to study Cézanne. Arthur B. Davies (1862-1928), one of the organizers of the Armory

Show of 1913, was a painter of delicate and lyric nudes, floating enigmatically through vaguely classic landscapes, in slender friezelike compositions. He broke away from the literal and prosaic qualities of the 19th-century academic tradition. Alfred Maurer (1868-1932) developed from a conventional academic artistic background, but after his arrival in Paris about 1900 he came under the influence of the Fauves. He was an artist who instinctively moved toward a symbolic and formal kind of composition, and in his paintings of the late twenties and early thirties he produced some strangely effective studies of interlocked heads (PL. 116) and a series of firmly conceived decorative still lifes. A towering figure among the artists related to Fauvist and expressionistic movements was John Marin (q.v.). He carried the water color to new heights of effectiveness and power. His scenes of the Maine coast and of New York City are composed with drama and invigorating breadth. He extends the planes of objects toward infinity: we seem to be looking *through* as well as *at* the material he deals with, not because it is transparent, but because it is part of a larger cosmos (PL. 118). Maurice Sterne (1877-1957), an early follower of Cézanne and the cubists, was for many years in the vanguard of advanced artistic thinking, reflecting many different phases of the art of his generation. Marsden Hartley (1878-1943) was a painter of monumental solidity and of highly personal symbolic power. He was concerned with basic elements: sea, mountains, people, flowers, abstract symbols, often austere and even bleak (PL. 116). He sums up most of the major tendencies of this pioneering group. Arthur G. Dove (1880-1946) produced an individual style of fantasy and abstract symbolism. He may have been influenced by the Fauves and the cubists, and there are certain elements in his style which parallel Feininger, but he was a unique personality who sought visual equivalents for sounds and sensations of all kinds. Joseph Stella (1880-1946), Italian by birth, came to the United States in his youth, but was directly influenced by Italian futurism in France and Italy during trips to these countries in 1909-12. He expressed the ceaseless, restless movement of the American crowd, as well as the breath-taking scale and grandeur of the huge engineering achievements of the American city, in a series of bold and complex canvases (PL. 115). Abraham Walkowitz (b. 1880) was an important figure in the early stages of American modernism. His fluent figure studies of the dancer Isadora Duncan belong to an international expressionistic mode. He was also an early experimenter with pure abstraction. Max Weber (q.v.), born in Russia, came to the United States as a child. An intense awareness and use of the Jewish tradition have given his work richness and depth. He has traversed an enormous amount of ground and has reflected nearly every contemporary preoccupation. He made essential contributions along both Fauvist and cubist lines, and has experimented with distortion, abstraction, formal order, and expressionistic and explosive figure painting (PL. 124). Arthur B. Carles (1882-1952), who early found a stimulus in the work of Matisse, developed abstract forms expressive of romantic, personal feeling. Thus in a way he was a forerunner of later abstract expressionism. Charles Demuth (q.v.) reflected the revolt of the early 20th century with elegance and precision. He worked in miniature—a watercolorist of fastidious taste and delicate touch. In addition, he had a strange insight into tortuous psychic states, a power of concentrating symbolic significance into meticulously realistic-seeming descriptions of plants and flowers, and an understanding of the architectural structure basic to American living (PL. 115). Samuel Halpert (1884-1930) was an early adherent of 20th-century French movements. His architectural compositions descend ultimately from Cézanne, but more directly from Derain and Marquet. In some ways he parallels the structural methods of Delaunay. Bernard Karfiol (1886-1952) in his earlier years contributed to the expressionistic movement in figure painting, frequently resorting to expressive distortion. His painting of the nude is broad and sympathetic, healthy, competent, and reassuring. Henry Lee McFee (1886-1953) assimilated some of the structural order of Cézanne's still-life paintings, and studied the innovations of the cubists, eventually developing a disciplined kind of romantic realism. Andrew Dasburg (b. 1887),

an early and ardent adherent of the cubist revolution, also experimented with abstract color and movement. Stanton MacDonald-Wright (b. 1890) from 1912 to 1917 was a leader of abstract painting in a style called "synchronism," an offshoot of cubism, which attempted to introduce deep space, dynamic motion, and more emotional color. There is a shifting, multitudinous quality to his works of this period, somewhat related to the French movement of Orphism. Neither movement lasted, but both represented significant steps in the creation of a characteristic 20th-century style. Man Ray (b. 1890) was closely associated from the beginning with the Dada movement and with surrealism, both in New York and in Paris, and experimented early with expressive and symbolic qualities in photography.

Stieglitz and the Armory Show. The first gallery in America which consistently showed modern art was Alfred Stieglitz's Photo-Secession Gallery in New York. Stieglitz (1864-1946), a pioneer photographer, began to show new painting and sculpture in 1908. He organized the first exhibitions in the United States of Matisse, Rousseau, Cézanne, Picasso, Brancusi, African art, children's drawings, and other works. At the same time, he recognized the talent of the young Americans, and gave the first one-man shows of Maurer, Marin, Hartley, Dove, O'Keeffe, MacDonald-Wright, and others. His quarterly publication *Camera Work* was a vehicle for important critical opinion.

So far as the general public was concerned, the new artistic movements of the 20th century first manifested themselves in the sensational Armory Show, which opened in New York in February, 1913. It was organized by a group of artists, under the leadership of Davies and Walt Kuhn, and included not only a large number of progressive American painters (then almost invariably excluded from the established exhibitions) but also many of the leading Europeans. Nearly sixteen hundred works by over three hundred artists were shown. Cézanne, Gauguin, and Van Gogh were seen adequately for the first time in America. About three-quarters of the work was American, representing almost the entire range of current activity.

Attendance at the show was very large (probably about a hundred thousand in New York). A considerable part of it was taken to Chicago and Boston. The critics were almost uniformly hostile to this first large-scale introduction to modern art in the United States, but American art was never the same again. The Armory Show for the first time brought American painting into the main stream of contemporary international artistic movements. It confirmed and strengthened the experimental attitude of those American painters who had participated in some of the new developments; it stimulated a younger group along progressive lines.

The Primitives. A totally unrelated trend also emerged during the 1920s. This was a new understanding and appreciation of primitive vision, of the work of the naive or folk artist. Such painters have always existed, though good ones are rare, but only now was their work accepted at its true value.

Joseph Pickett (1848-1918) became known only after his death. He was a storekeeper in a small town in Pennsylvania, who, late in life, painted a series of observant and detailed scenes of his native town and some historical episodes in connection with it. These were eventually recognized by sophisticated critics as extraordinary examples of naive vision, meticulous detail, and instinctively fine composition. John Kane (1860-1934), born in Scotland, was a Pittsburgh laborer, who, without formal training, painted city scenes, landscapes filled with references to the engineering works of man, a severe and almost ritualistic self-portrait, and reminiscences of his boyhood in Scotland. He belongs to a long tradition of good craftsmanship and sharp observation, the folk artists' contribution to American art. Among later painters of this type, Horace Pippin (1888-1946) was a strong figure. Like many folk artists, he began to paint only in middle age, using rhythmical, flat designs, and exhibiting powerful imaginative vision. (See *FOLK ART*.)

Nonacademic Traditionalists. Throughout the 1920s an important group of painters, the so-called "nonacademic tradition-

alists," continued to deal with people and places, often giving their work a strongly nationalistic flavor, which stemmed in part from the views of The Eight but was not untouched by the structural innovations of the pioneers of modernism.

Jerome Myers (1867-1940), as early as the 1890s, turned, to the New York City slums as material for his work. Though a realist in subject matter, he interpreted these themes in a romantic vein of fantasy, delighting in picturesque public spectacles and dancing decorative surfaces. Kenneth Hayes Miller (1876-1952) painted statuesque figures that represented an intelligent synthesis of the classic tradition with some of the emotional warmth and coloristic richness of the impressionists. Boardman Robinson (1876-1952) was an excellent illustrator and a brilliant draftsman. During the 1920s he painted some mural decorations of genuinely architectural conception. Walt Kuhn (1880-1949), one of the principal organizers of the Armory Show, derived from Cézanne a figure style that was solid, powerfully articulated, and architectural. He gave monumental emphasis to the individual figure. George Bellows (1882-1925) early in the century discovered the rich possibilities of typically American scenes and types (PL. 122). He was an excellent draftsman, with a sense of humor and a relish for "characters", his early work tended to be spasmodic, and he was later too much influenced by the theories of "dynamic symmetry," but his robust and healthy spirit was a positive influence. Rockwell Kent (b. 1882) painted the vastness and grandeur of wintry seas and coasts with sharp distinction and a measured sense of scale. Later, he concentrated upon wood engravings, which influenced a whole generation of illustrators. Guy Pène du Bois (1884-1958) developed from The Eight, was influenced by such European social reporters as Forain and Steinlen, and became a significant figure among the socially conscious painters. His satiric genre paintings employ a simplified figure style with directness and precision. Leon Kroll (b. 1884) continued the classic tradition of figure painting. His statuesque nudes are touched with sentiment and realized with some of the coloristic warmth of the Renoir tradition. Glenn O. Coleman (1887-1932), like Henri, Sloan, and Bellows, found in city streets and city dwellers a rich source of material. More than any of these, however, he responded to the structural preoccupations of modernism, eventually developing effective and relatively impersonal symbols of the solids and spaces of the urban scene.

Regionalism. The post-World War I mood, which led the nation into a program of political and economic isolationism, stimulated a return to a new kind of nationalism in painting. This was a self-conscious flight from the internationalism that had reached its height in the Armory Show and in the wholesale residence of American artists in Europe (particularly in Paris), and was, in addition, an equally self-conscious repudiation of the big city as a center and source of artistic inspiration. The movement, which reached its high-water mark in the 1930s, is known as "regionalism," and is particularly associated with a group of Middle Western painters. It exerted a powerful influence on the government-subsidized art of the depression years.

Thomas Hart Benton (b. 1889), one of the most prolific and outspoken members of this group, experimented along contemporary European lines before World War I but rejected this approach after the war and developed a strongly plastic anecdotal style, which found expression in several important mural cycles. His figure compositions, in which formal distortion is touched with caricature, develop from central compositional movements, with bulging forms and rather self-conscious rustic subject matter (PL. 122). Grant Wood (1892-1942) was a skillful illustrator, with a sense of humor and a nostalgic feeling for the rural side of Middle Western life (PL. 122). His work is precise and overcalculated, but sprightly in content and mock-heroic in its attitude toward events of early American history. John Steuart Curry (1897-1946), who started as a magazine illustrator, exploited the rural sights and characters of the Middle West with honesty and delight. From a formal point of view, however, his paintings are often casual and seldom go far beneath the surface quality of things.

The American Scene. One group of artists may be characterized as "scene painters." In various ways they recorded the society around them: some with impersonal observation, some with romantic insight, others with dramatic movement.

Edward Hopper (q.v.) has recorded with extraordinary clarity the structure and content of certain aspects of American life. Victorian houses and streets, the loneliness of the individual lost in the anonymity of city life, the precise qualities of certain atmospheric effects, are presented with a cool objectivity which yet allows for a strong sense of personal mood (PL. 122). Charles Burchfield is considered under another category, but in his middle period he also made important contributions to this development in American art. Reginald Marsh (1898-1954) devoted to New York City something of the same attention which Benton, Wood, and Curry applied to Middle Western rural life. An excellent figure draftsman, he found his themes in crowded city streets, beaches, burlesque shows, amusement parks. There is an almost baroque opulence in his figure style, abundant and vigorous in character. The Soyer brothers, Moses (b. 1898) and Raphael (b. 1899), have developed a vein of city genre, often stressing the more lyric and reflective characteristics of working people and dancers. Some of the relaxed quality of late impressionistic work is retained in their painting. Isabel Bishop (b. 1902) has painted women with amplitude and sensitivity. She turned to the working woman in the city for her themes, but treated this material not as social criticism or even as social analysis, but rather as a formal esthetic problem.

Government and Art. The depression of the 1930s, and the relief policies of the Roosevelt administration, introduced a program of government sponsorship of art which lasted until the entrance of the United States into World War II. For a number of years, no other modern government so extensively subsidized contemporary art. The Federal art projects were carried out through a nationwide system of regional committees, employing an excellent system of competitions open to all artists. The extremely conservative taste that had controlled individual governmental commissions in the past was by no means followed exclusively, nor were the new commissions confined exclusively to mural and sculptural decorations of public buildings. Easel painting and graphics, as well as the visual recording of many aspects of the American past (in the *Index of American Design*), were important parts of the program. It should be remembered that this government patronage was first of all a relief measure, a plan to give work to the unemployed. While there were certainly commissions awarded to artists who were not equipped fully to realize the opportunities given them, there were many excellent works commissioned and widely distributed, and many young artists were given support and encouragement at a crucial stage of their careers.

This promising program was canceled by the war and has never been resumed. Governmental art commissions are again awarded on the earlier noncompetitive, usually very conservative, basis. Governmental plans and funds for the organization and circulation of exhibitions of American art in other countries have been limited.

Mid-20th-century Painting on Social Themes. The work of The Eight and of the regionalists is part of a continuing tradition in American art. Mid-20th-century painting with sociological implications has centered more and more on problems of urban living and has tended to develop symbolic overtones.

Ben Shahn (q.v.) is the major figure among artists who have devoted themselves to the expression and realization of the American social scene. His powerful and individual draftsmanship, his insight into unique personal characteristics, the freshness of his vision, and the unexpected subject matter of much of his work make it invariably noteworthy (PL. 120). Highly personalized figures are given symbolic significance in his paintings and drawings. Stimulated by a strong sense of social justice, he has often used his art as a vehicle for propagandistic effort. Adolph Dehn (b. 1895), primarily a watercolorist and lithographer, was influenced by Pascin and Grosz, but his works are without their bitterness and disillusionment.

He relies in part on a sharp sense of the grotesque and a warm feeling for the unique quality of specific environmental factors. William Gropper (b. 1897) made his reputation as a cartoonist for liberal magazines and newspapers, and continued such themes in his paintings. He was influenced by Bruegel and Daumier. His use of a symbolic type of figure construction, which relates to his work as a caricaturist, is incisive and decorative. Philip Evergood (b. 1911), a humanist of the most expansive kind, has often expressed social protest in his subject matter, but his work is also fantastic, sensuous, humorous, melodramatic, abundant, and unexpected. Invariably full of ideas, Evergood has developed a peculiarly personal kind of mythology. Robert Gwathmey (b. 1903) has revealed the life of the Southern Negro in smoothly finished and carefully adjusted compositions, with large areas of pure color; his is a decorative and abstract handling of realistic themes. Paul Cadmus (b. 1905) has proved a sharp observer of society in some of its most offensive aspects. The brutality and vulgarity of his figures are conveyed in a slickly efficient style. An intensely physical, materialistic quality underlies all his work, which derives from Renaissance prototypes in specific construction and composition. Anton Refregier (b. 1905) successfully developed themes common to the socially conscious painters in a number of large and ambitious mural compositions, explicit in content, genuinely architectural in composition. Joseph Hirsch (b. 1910) has given monumental dignity to city characters and episodes of city life. His work, which is serious and significant, shows a strong sense of structural composition. Mitchell Siporin (b. 1910) has handled social themes in more symbolic terms, using an expressive distortion in his closely organized work. Jack Levine (b. 1915) has found dramatic situations and characters in the American city environment (PL. 123). His early works are heavily but effectively satirical, often with bitter undercurrents; his later ones tend to be more urbane in their social comment. He has retained a brilliant pseudo-impressionistic style and has enlarged the concept of illustrational painting to monumental proportions. Jacob Lawrence (b. 1917) has dealt with the character and the social significance of the American Negro with authority. His style is sharp and distinct, with a certain primitive directness of vision which insists on the significance of each separate form.

Europeans in the United States. The immigration of important European painters in the 20th century has had a significant influence. A few came during and after World War I; a great many more as a result of the political upheavals in Germany during the 1930s.

Jules Pascin (1885-1930), one of the first important European painters to come to the United States, was a Bulgarian who began as an illustrator in Germany, lived for many years in Paris, and came to America in 1914. He was a bitter and ironic spirit, not at home in any of these environments, a sensitive draftsman, and a painter of nervous intensity. His studies of women, which relate to Lautrec, have an unusual and often painful intensity. Nicholas Vasilieff (b. 1892), a Russian who came to the United States in 1923, combines sophistication of color and paint handling with a certain naïveté of vision.

Throughout the 1930s and 1940s European painters of stature appeared in America and made themselves part of the American scene. In most cases they had already made crucial contributions to 20th-century art; in others it was only after they reached the United States that they found complete fulfillment. Hans Hofmann (b. 1880) came from Germany in 1930, and has been influential both as artist and as teacher. His vehement style is abstract but closely related to firsthand visual experiences. The materials are handled with explosive vigor, with impulsive passages that battle against strict geometric barriers (PL. 124). George Grosz (1892-1959), who arrived in 1932, is known chiefly for bitter and probing drawings and water colors expressing the desperation and intensity of German life during and after World War I. After his arrival he explored the destructive elements of the times as well as a grandiose and academic figure style. Joseph Albers (b. 1888), one of the pioneer teachers at the Bauhaus in Weimar and

Dessau, came to the United States in 1933. His influence on basic studio training has been great. His penetrating studies of color and of the effects of space and movement upon form have influenced a whole generation of younger designers. His work is severe, geometric, full of visual-spatial illusions, with little concern for the inherent qualities of pigment. Lyonel Feininger (q.v.), though born in New York, lived more than fifty years of his long life in Germany, and was the first painter on the staff of the Bauhaus. He reestablished himself in the United States in 1936. In his paintings, small in scale but extraordinarily spacious in implication, he seems to search for an architectural order in the world of nature. He extends planes of objects into infinity. The city and the sea provide his themes (PL. 115). Yves Tanguy (1900-55), one of the founders of surrealism in France, came to the United States in 1939. He created a world of extreme complexity, with bone-like but intensely vital forms that struggle with each other and grow organically in limitless spatial surroundings. The smooth surfaces and disciplined execution control a content which is tense and mysterious. Piet Mondrian (q.v.), the pioneering Dutch painter who represents one of the most severe phases of nonobjective art, spent the last four years of his life in New York. A number of precisionists were influenced by him. Max Beckmann (1884-1950), one of the most powerful of the German expressionists, spent his last three years in the United States. He created magnificent figure compositions, with a personal and significant symbolism, expressed with a directness that at times was ruthless, though he was also capable of statements of great delicacy.

Many other important painters came to America from other countries for longer or shorter periods. Fernand Léger, Marc Chagall, and Max Ernst (qq.v.) were all active in the United States, while such international figures as Amédée Ozenfant (b. 1886), László Moholy-Nagy (q.v.), who developed the Institute of Design in Chicago, Pavel Tchelitchev (1898-1957), Salvador Dalí (q.v.), and Roberto Matta Echaurren (b. 1911) established themselves there.

In the late twenties and thirties the two most significant figures in the Mexican renaissance of large-scale fresco painting, José Clemente Orozco and Diego Rivera (qq.v.), received important mural commissions in the United States, and exerted a decided influence on American painters of social themes. Rufino Tamayo (q.v.) did some important work in New York.

The Precisionists. A significant tradition in much American painting has been a style that reflects the efficiency and smooth organization of certain aspects of American life. In one sense this is an esthetic response to the importance of the machine and its effects; in another, it is the continuation of a much older tradition of exacting craftsmanship. The so-called "precisionists" often avoid the human element as such, and, though they use characteristically "American" themes, they seem not so much painters of the American scene as painters of a type of *seeing* which is typical of one aspect of the American character. Of artists already mentioned in other connections who belong to this group are Charles Demuth and, to some degree, Edward Hopper.

Charles Sheeler (b. 1883) has shown a vision that is clear, cool, efficient, well-organized, and completely indigenous. His themes are characteristically American, whether he depicts the city, well-ordered farms, shipboard scenes, or colonial prototypes. His logical and sensitive style is a functional adaptation of precise vision and rigorous organization. Georgia O'Keeffe (1887-1959), painting with smooth surfaces and delicate gradations of color and value, has exhibited an intense visual awareness of her surroundings (PL. 116). She often startles us by enormously concentrated views, in unexpected scale, of objects that we seldom see isolated. Bones, the stamens of flowers, the distant horizon, the silhouettes of lonely farm buildings, acquire a startling and symbolic significance through this kind of handling. Niles Spencer (1893-1952) was a master of architectural organization. In his works pure planes, sharp edges, complex but logical relationships of engineering structures, are handled with austere decision. Louis Guglielmi

(b. 1906) has used the immaculate surfaces and deliberate organization of the precisionist tendency for different purposes. He deals with social problems, and introduces surrealist and abstract elements in a consciously disturbing fashion. Walter Murch (b. 1907) is one of the great interpreters of the machine. Superficially, his work may seem limited to painstaking representation, but purely material elements are always given deeper significance in his paintings, which become symbols of an ordered way of life, functioning in proper and inevitable sequence. He suggests the constructive genius of the 20th century. The most brilliant of the younger precisionists is Andrew Wyeth (b. 1917). His rural New England subject matter is strongly illustrational, his handling of the painter's material impersonal; he is engrossed with the most minute details of visual sensations. He exploits unexpected physical relationships of objects and personalities. The work of Bernard Perlin (b. 1918), one of the many mid-century painters who have found a source of inspiration in the great architectural monuments of classical antiquity and of Renaissance Italy, is meticulous, strongly decorative, with rich connotations and romantic overtones. In the work of Carlyle Brown (b. 1919), a painter of disciplined still lifes, often with Italianate motifs, formal relationships are emphasized. These elements merge with a dream-like world of the imagination, so that the distinction between the actual and the visionary is broken down.

Formal Abstract and Nonobjective Painters. The international movements that led to constructivism and purism in Europe had their counterparts in the United States in the work of those artists who stressed severe or formal abstract and nonobjective designs. Related to the precisionists, but without their reliance on descriptive subject matter, is Stuart Davis (b. 1894), who exhibited in the Armory Show at a very early age. The neon-bright color, the sharp edges and geometric forms, the startling emphasis on the shapes of letters and inscriptions, the visual jokes and puns and shocks of his compositions, the insolently impersonal surface and lack of texture, all combine to form a brilliant individual idiom (PL. 126).

The presence in the United States of some of the leaders of abstract and nonobjective art in Europe, such as Feininger, Albers, and Moholy-Nagy, has not been without influence.

Fritz Glarner (b. 1899), of Swiss birth, represents a classic point of view in opposition to the romanticism and expressionism surrounding him. His geometric compositions, with precise cutout color areas woven together, stem from Mondrian, but have greater movement, tension, and spatial suggestion. George L. K. Morris (b. 1905) has been interested in the expression of deep space in abstract geometric terms. He plays three-dimensional space against surface pattern, developing symbolic types of perspective that are ample and moving. I. Rice Pereira (b. 1907) is also an artist of geometric compositions, elegantly and distinctly composed. She has made interesting experiments in the use of new materials (plastics, glass), and in introducing actual spatial contrast as well as purely visually realized space. The work of Attilio Salemmi (1911-55) is characterized by immaculate surfaces and ordered geometric compositions of thin, sticklike forms, infused with a curious humanistic personality, enigmatic and disturbing. Ad Reinhardt (b. 1913) organizes closely related areas of color in rigorously controlled compositions, self-consciously excluding all traces of associated ideas in an effort to achieve complete esthetic purity. Jimmy Ernst (b. 1920) has used abstract forms with much more emotional drive, developing complex structures of mechanistic and functional character.

Influence of the Subconscious. Opposed to those painters who reflect American functional efficiency is a varied group that in a number of ways has explored the depths of human nature, the influence of the subconscious, sometimes symbolically, sometimes intuitively, sometimes influenced by orthodox surrealism, which, however, had little American following.

Edwin Dickinson (b. 1891) has adapted a brilliant naturalistic method to strikingly modern usages. Though a figure painter in the old-fashioned sense, he can by no means be

considered an academic survival, in view of the strange content and unexpected juxtapositions he infuses into his work. The works of Ivan Le Lorraine Albright (b. 1897) are meticulously detailed, probing, and comprehensive. Achieved slowly and thoughtfully, they look as if they had aged during the actual process of creation; they express the corruption of the flesh, the material accumulations of life, with haunting strangeness (PL. 123). The same life which pulses in a kind of final extremity in Albright's human forms illumines the rejected rubbish which piles up in his still-life compositions. Kay Sage (b. 1898) expresses the mystery of deep space in smooth compositions involving complex structures that look rigorously functional, but whose use and meaning are obscure. Kurt Seligmann (b. 1900), of Swiss origin, took part in the development of surrealism in Paris in 1929. He is the creator of intensely animated forms, which, though nonhumanistic, show a personality and movement of specific character. Peter Blume (b. 1906) has painted slowly and with intense thought and care a small group of major canvases, each rich in physical and symbolic content (PL. 123). His point of view is encyclopedic, his vision microscopic. There are unexpected contrasts of realistic and dreamlike imagery, deep linear perspective, a smooth impersonality of surface treatment, and at times a profound mastery of subconscious symbolism. The work of Loren MacIver (b. 1909), one of the most poetic painters of her time, is thin and elegant in physical form, boldly imaginative in conception, concerned with ultimates and absolutes. It sometimes contains startling images in which familiar forms are presented from possible, but unconventional, points of view: looking straight up into space, straight down into depths, very close at detailed surfaces ordinarily seen only as parts of larger complexes (PL. 121). Alton Pickens (b. 1917) has created some of the most disturbing images of the time. There is intense physical realism in the detailed presentation of materials in his work; but a strange deformity and aggressive nightmarish quality prevent logical interpretation; the ominous and the tragic mingle strangely with the humorous and the grotesque. The work of Joseph Glasco (b. 1925) reveals an individual vision combining the simplicity of the primitive with the complexity of the highly sophisticated. With a sumptuous color sense, a highly personal method of composition, which controls huge central areas by tiny knots of detailed elements at the extremities, he has evolved a disturbing individual style. The so-called "magic realists," have developed a style of meticulous descriptive realism with surrealist overtones, achieving startling clarity and dreamlike strangeness with their smooth surfaces, rapt figures, and arrested movements. To this group belong Jared French (b. 1905) and George Tooker (b. 1920).

Visionaries and Others. Painters of intense inner vision have been among the most interesting personalities of the first half of the century. Mark Tobey (b. 1890) has developed a uniquely personal handwriting, which becomes an effective symbol for the hidden physical structure of the material world and, in addition, a portent of spiritual significance (PL. 121). His painting has moved from representational motifs to delicate, intricate, surface linear patterns, no longer descriptive in an orthodox sense, but strongly organic in effect. Charles Burchfield (b. 1893), a visionary of a totally different kind, at one time seemed to belong to the group of American scene painters. He has painted, in monumental water colors, rows of Victorian city houses and landscapes; he has developed strongly symbolic shapes within the terms of his descriptive details; he has stressed the growth of organic forms, the intense fruitfulness of the body of nature (PL. 121). A kind of mystical pantheism informs the multitudinous objects in his compositions with flowing life. Kenneth Callahan (b. 1906) has developed a style in which the forms of rocky cliffs, the fluid movement of waves, the vagrant activity of clouds, combine in mysterious visions. Figures, often small in scale, seem to be incorporated within these larger movements. Morris Graves (b. 1910) has expressed his vision of a universal mysticism through the forms of birds, waves, trees — through the spirit of these forms rather than their external shells (PL. 124). He has been influenced by the Orient,

not only in the quality of his mysticism, but in his ink brush stroke, of an Oriental variety: flowing, nervous, sensitive, continuous. William Baziotes (b. 1912) invokes fantastic organic movements and shapes; he is not descriptive in any usual sense of the term, but his inventions recall plant forms, the movement of water, and organic developments (PL. 127). The application of paint is thin and elegant, with subtly modeled large areas, often of uninterrupted color.

A considerable number of artists in different areas of the modern school have responded to such varied influences as expressionism (Burlin, Adler, Rattner, Bloom, and Burlin), romanticism (Kuniyoshi, Congdon, Lebrun, and Watkins), magic realism (Levi and Greene), and Fauvism (Avery).

David Burlin (b. 1882) had a career in Russia, Munich, and Paris before he came to the United States, where he united elements of futurism and mechanism with impressionistic color, expressionistic emotion, academic realism, and Old World mythology, all of this handled with an engaging naïveté. Paul Burlin (b. 1886) has reflected many of the preoccupations of his generation, with a late period characterized by strongly and arbitrarily composed figures infused with intensity and emotion and by a tendency to exploit the intrinsic qualities of the medium. Karl Knaths (b. 1891) has developed a formal still life that carries the purely plastic possibilities of mass, space, and color relationships to extreme degrees of sophistication. The thematic material harks back to the artist's Middle Western origins or to the seacoast; these connotations, however, are largely lost in the final achievement. Yasuo Kuniyoshi (1893-1953), born in Japan, had a remarkably fresh vision, a combination of the directness of the naïve or instinctive artist with the sophistication and self-consciousness of his generation (PL. 123). The world of reality and the world of make-believe seem to mingle in his work; he was fascinated with acrobats and festival scenes. A stylist of a completely different type is Milton Avery (b. 1893), who, while remaining always close to the stimulus of the world of nature, has expressed himself with large, simplified, thinly painted, decoratively shaped areas, particularly sensitive in color relationships. Franklin Watkins (b. 1894) has shown a mastery of the expressive human face and figure rare among contemporary painters, of whom he is one of the few considered seriously as a portrait painter. He frequently used a peculiarly dramatic and expressive kind of distortion. Turning to some of the great religious themes, he produced symbolic forms of sober strength and power. Abraham Rattner (b. 1895) lived for 20 years in France, where he was in the forefront of post-World War I movements. His work is marked by a rare sense of content that makes him one of the most serious and compelling painters of his time. He is deeply interested in Biblical themes. He has created a group of expressive personal symbols which, unlike many contemporary symbols, have moving communicative power. There is a stained-glasslike brilliance and luminosity in his painting, which is sumptuous and generous in treatment (PL. 124). Samuel Adler (b. 1898) has shown himself a sensitive composer of abstract paintings that retain a compassionate knowledge of human personality and a firm structural awareness of the physical forms of nature. He plays infinite variations on closely knit color harmonies. Rico Lebrun (b. 1900), a powerful draftsman who finds in the human figure and in human emotions the material for dramatic expression, has treated many aspects of the theme of the Crucifixion, at times with overwhelming effect (PL. 124). He combines the sensitive and the violent in a strange way, often with raw emotional power. Julian Levi (b. 1900) has painted sea and shore and the drifting objects of these regions with great perceptiveness, and, like every true artist, transcends these forms as material objects and translates them into larger symbolic terms. His work is texturally rich. Lee Gatch (b. 1902) has demonstrated a remarkably individual vision. His paintings seldom lose a close sense of involvement with the primary personal experience of visual material, though the development is a very abstract one. He has expressed structure and movement and space relationships with skill and often with distinct novelty. His color is exhilarating. Karl Zerbe (b. 1903), born in Germany, has passed through many artistic phases, both technically

and in thematic material. One of the chief interpreters of the American city scene, he has painted mechanistic forms and flashing artificial lights, rejecting individual humanity in an architecturally conceived style that finally turned to the abstract. John Heliker (b. 1909), after a period of social studies, has developed an extremely abstract style, in which landscape and architectural themes of deep personal significance are carried to a high pictorial level with taste and elegance. Arthur Osver (b. 1912), a painter of the city, first made his reputation with vigorous monumental compositions built up of roof tops and chimneys. These became more and more involved from a spatial point of view. A later period in Italy caused him to turn to richer, more emotional color and to a more fluent method. William Congdon (b. 1912) has used architectural themes (generally European) and extraordinarily rich and durable material structures. He has exploited an unusual use of metallic paint, and suggests the vast scale and antiquity of many of his themes with power and a deep lavalike inner richness. Hyman Bloom (b. 1913) has probed deeply into human consciousness and physical being. There is a strange obsession with death—often violent—and decomposition in his work (PL. 127). He has a powerful imagination, a sumptuous appreciation of the material possibilities of pigment and color, and a profoundly serious approach. Stephen Greene (b. 1918) first attracted attention with paintings that dealt with cripples and other maimed figures, involved in mazes of ladders or boxes, which seemed to symbolize the perplexities of modern life. Later, while retaining the same complex humanistic symbolism, his painting became less literal, more colorful, more fluent and expressive. David Aronson (b. 1923) has created a dense pictorial language, often employing Old Testament themes, with packed meaningful details. He expresses the importance and dignity of the human being, the power of the human will.

Abstract Expressionism. One of the most characteristic kinds of painting of the mid-century is that in which abstract or nonobjective forms are developed for intuitive, personal, expressive reasons, often much influenced by the inherent qualities of the medium itself. Indeed, among the younger artists the idea that the work of art in some measure "creates itself" has gained currency. Recognition of the inner life and character of the medium employed, the utilization of accidental effects, the conception of the artist as an almost passive instrument, the feeling that the process or development is more important than the end result, are essential elements of the cult of active and direct participation in artistic operations for their own sake rather than for what they lead to. The arrival of Hans Hofmann in the United States in 1930 provided a powerful stimulus in this direction.

Bradley Walker Tomlin (1899–1953) developed a rich and suggestive surface style, related to calligraphic movement, with haunting intimations of hidden symbolism. At an earlier stage he had suggested humanistic images, but these were lost in the rich interplay of form and color, often characterized by bold and fanciful circular forms contrasted against a strongly angular skeleton. In the work of Adolph Gottlieb (b. 1903) patterns of grids are superimposed one upon another (PL. 121). Spatial relationships are developed with exciting suggestions of both linear and formal nature, and also by movement of color. Some of the shapes suggest primitive ideographs; they seem to constitute a hidden, personal symbolism, characteristic of the work of many contemporary calligraphic artists. Mark Rothko (b. 1903) has covered large canvases with films of pure color, usually roughly rectangular and conforming to the basic outline of the picture plane. These color areas have an extraordinary quality of almost disembodied purity as they float in limitless space and allow the spectator to submerge himself in a pure color-space experience. Arshile Gorky (1904–48) was one of the most influential of the abstract expressionists. He went through an early representational phase that led to increasingly abstract works, which, however, never lost a passionate feeling of human emotion and organic growth and movement. The highly articulate forms from which he builds his compositions have a quality of urgency and compulsion

(PL. 127). Willem de Kooning (b. 1904) advanced from forceful nonobjective painting to a violent and aggressive handling of humanistic imagery. His work provides an excellent demonstration that contemporary expressionism is not *about* certain subjects, but that it *is* in its own right. The pigment has authority and maximum character; the paintings are constructed with vehement energy and life-giving power (PL. 127). Lawrence Kupferman (b. 1909) has been deeply interested in the patterns and forms produced by the flowing of all kinds of liquids: water, paint, blood, sap, clouds. He has also found the study of microscopic forms a fruitful source for artistic expression. This combination has resulted in a nonobjective style that seems to be part of the larger experience of nature itself and to have symbolic significance beyond its own material richness. Franz Kline (b. 1910) has painted monumental, tensely balanced structures in austere black and white. The big scale, the aggressive intensity of the imagery, the violent handling of the material, the sense of lost or hidden forms obliterated by what remains, the overtones of Oriental ideographic forms, are all part of his approach. Jackson Pollock (q.v.) was in some ways the most influential of the restless creators of his type. His reputation was founded on a series of huge canvases upon which complex swirls of paint interwove in endless movements and patterns. The forms seem to suggest the infinite detail and the endless proliferation of life itself. An intuitive or instinctive kind of structure controls these tumultuous works (PL. 125). Philip Guston (b. 1912), after creating a sensitive, highly stylized, method of presenting the human figure in symbolic compositions, turned to a completely nonobjective style characterized by the most minute adjustments of color and texture, often within a severely limited scale. Corrado Marca-Relli (b. 1913) is best known for monumental collages, heavily built up of canvas of slightly varying color qualities, with small areas of black paint hiding beneath; a strange sort of lumbering personality emerges from these enigmatic works. In another vein, he has also painted smooth urban scenes, faceless and lacking in recognizable humanity, suggesting somehow the bleakness and emptiness of certain aspects of modern life. Robert Motherwell (b. 1915) has developed a personal imagery which allows intuitive vision full scope. He often uses the collage as a medium, with strong contrasts of texture. Theodoros Stamos (b. 1922) has never departed completely from direct contact with nature, but has expressed it with large and simplified gestures.

Graphic Art after 1913. The principal developments already discussed were paralleled in the graphic arts. Many of the same artists made some of their most important statements in this field. Marin, Feininger, Bellows, and Dehn, in various ways, were consistently active as print makers, while Pascin, Kuniyoshi, Grosz, Marsh, and Shahn have been particularly noteworthy in the production of independent drawings. The important influence of Kent on book illustration, of Robinson and Gropper on the political and social cartoon, should also be noted. During the period when regionalism was an active force, there was an emphasis on lithography as a "democratic" medium in furthering artistic movements. George O. ("Pop") Hart (1868–1933), in his racy and observant drawings and water colors, was an independent figure, while the sharp social judgments and prolific lithographs of Peggy Bacon (b. 1895) were characteristic.

One of the remarkable developments of the mid-century has been the enlargement of the field of graphics, which has changed the medium from a reproductive, academic one to a dynamic form of creative expression, marked by an intense preoccupation with technical innovations. Here a key figure has been the English artist Stanley William Hayter (b. 1901), who, first in Paris and later (from 1940) in New York, exerted great influence through his group, "Atelier 17," which carried on extensive research in soft-ground textures, relief etching, and other combined techniques. Mauricio Lasansky (b. 1914) came to the United States from Argentina in 1943 and founded his graphics workshop at the State University of Iowa in 1945. He has trained and inspired a whole generation of students who have spread an enthusiasm for the new kind of graphics

throughout the country. Their compositions have often introduced expressionistic, surrealist, and abstract elements, always based on complex intaglio techniques.

The old concept of the print as a small-scale black-and-white object is largely gone; recent prints have turned more and more to color and are frequently monumental in size. All the major techniques — intaglio, relief, lithography, serigraphy, woodcut — have moved into a full-color development. New techniques are appearing: the cellocut, lucite engraving, color printing with encaustic crayons. Many techniques may be employed upon a single plate.

Among other artists who have made distinguished contributions to the intaglio print are Adja Yunkers (b. 1900), Gabor Peterdi (b. 1902), and André Racz (b. 1916). Boris Margo (b. 1902) is the inventor of the cellocut. Among a remarkable group of artists who have given the woodcut new dimensions are Louis Schanker (b. 1903), Antonio Frasconi (b. 1919), Seong Moy (b. 1921), and Leonard Baskin (b. 1922). Edmond Casarella (b. 1920) has used the paper relief cut with bold distinction. Sister Mary Corita has expressed a deep interest in meaningful content in a series of brilliant serigraphs.

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SCULPTURE. *a. From the 18th century to the Armory Show.* Except for a few wood carvers and tombstone cutters, there were no native sculptors in the United States in the early days until William Rush (1756–1833) began his career as a carver of ship figureheads in Philadelphia about 1780–90. Although

two academies of art were founded in the United States early in the 19th century (at Philadelphia in 1805 and in New York in 1803), these little institutions were principally for the exhibition and sale of paintings. Both of them imported collections of plaster casts of Greek and Roman sculpture from the Musée Napoléon. These casts, although they had little importance as sources of instruction for young sculptors, reflected the ruling taste of the time, which formed the style of our early sculptors and their ideas about the art. Actually, most of the young Americans who wanted to study sculpture (e.g., John Frazee, 1790–1852, and Thomas Crawford, 1813–57) learned what they knew about stone carving from the marble yards where tombstones and building blocks were cut; and their knowledge of the art of modeling was perhaps picked up accidentally from the waxwork effigies of kings and criminals displayed in taverns and grogshops by itinerant showmen.

However, in spite of the lack of good art schools and teachers, there seem to have been a steadily increasing number of young men who wished to become sculptors. The art of sculpture itself was widely advertised throughout the United States by a number of interesting circumstances. First of all was the demand for marble portrait busts and statues of the great national hero George Washington. This brought the French sculptor Jean Antoine Houdon to the United States in 1785. Another visiting sculptor whose enthusiasms and eccentricities brought attention to the art was the Italian Giuseppe Ceracchi (1751–1802), who visited Philadelphia in 1791–94 and made portrait busts of Washington and other political figures. These portraits he hoped to incorporate into a fantastic marble monument to Liberty. In 1806, two Italian sculptors, Giuseppe Franzoni and Giovanni Andrei, were brought over to Washington, D.C., to carve sculptural ornaments for the new national Capitol then under construction. After the War of 1812, more Italian sculptors were imported to work on the Capitol. In 1816, the State of North Carolina commissioned Antonio Canova to make a monumental statue of Washington (unveiled at Raleigh in 1821, destroyed by fire in 1831). All these events were widely reported in the newspapers and commented on by political orators and legislators, who appropriated money from the public funds to pay for sculpture. Thus the art of sculpture, the importance of sculptors, and the large sums paid to sculptors were brought to the attention of the public.

The political separation of the United States from England in 1776 did not, of course, end the flow of ideas and cultural influences from the mother country. In fact, for the greater part of the 19th century, London remained, even as it had been in the 18th century, the principal source of American ideas about art. In any case, ideas which had been current in England for a long time determined the plan of study early American sculptors and painters followed. Principal among these ideas was the belief that a trip to Italy was indispensable for the student of sculpture. The first American to set out upon this course was Horatio Greenough, who left Boston in 1824 to settle in Florence, where he worked for a number of years. Almost every other American sculptor aspired to follow his example, and from 1824 to about 1880 many American sculptors went to Italy to study. Some of them spent their whole lives there, never returning to their native country (e.g., Hiram Powers, William Story); others remained in Italy for long periods. They were all bound to Italy by many ties, but their dependence on trained Italian marble cutters really made it more or less impossible for most of them to work anywhere else. As long as the patrons and purchasers of sculpture desired white marble, the American sculptors (as well as their fellows from other countries) were content to remain in Italy.

The sudden appearance of a group of American sculptors from the wildernesses of the New World was considered one of the phenomena of 19th-century art history. Before 1835 no one in the art centers of Europe had heard of an American sculptor, yet within the next two decades at least four American sculptors attained some degree of international fame. Horatio Greenough (PL. 128) was the first American sculptor to be awarded an important commission by the United States government (1832); Hiram Powers won international fame with his

Greek Slave (1845; PL. 128), especially after its sensational success at the Crystal Palace Exposition in London in 1851; Thomas Crawford received a large commission for sculpture from the United States government in 1853; and William Wetmore Story won acclaim at the Paris Exposition of 1862 with his *Libyan Sibyl* and his *Cleopatra*.

The sculpture produced by these men in the period 1825–75 wavers undecided between the cold neoclassic style of Canova and the heavy sentimental realism of Bartolini. In fact, American sculpture before 1880 — like the sculpture of all European countries of that time — was really not much more than a provincial branch of Italian sculpture. Antonio Canova himself was the image upon which the first American sculptors hoped to model their own lives — his rise from poverty to world eminence appealed to the Americans perhaps even more than did his white marble gods and nymphs.

The chief characteristic of American sculpture of the 19th century was its drift from the neoclassic style toward an uncompromising realism in answer to the claims of patrons who wanted realistic portrait busts. This tendency was much accelerated after the Civil War by the demands of monument committees bent on erecting memorial statues to the heroes of the war. Their interest in equestrian monuments also encouraged a number of sculptors to specialize in modeling horses. Portrait sculptors who were not sure of their ability to represent the subtleties of equine anatomy called in these men to collaborate on their monuments.

Today, of all the hundreds of American sculptors of the time, perhaps only a few can be said to be remembered at all or to have established any kind of permanent reputation. Among these would certainly be Hiram Powers (1805–73), the most famous American portrait sculptor of his time (PL. 128); Horatio Greenough (1805–52), remembered for his pioneering essays on functionalism in art (1853); John Rogers (1829–1904) who sold by mail order over eighty thousand plaster copies of his statuette groups (PL. 129); Erastus Dow Palmer (1817–1904) and John Q. A. Ward (1830–1910), sculptors who never studied in Italy; and the extraordinary doctor, William Rimmer (1825–74), a sculptor, draftsman, anatomist, and teacher (PL. 128).

At the Centennial Exposition in Philadelphia in 1876 the sculpture display was mainly white marble in the Italian style. Seventeen years later, at the World's Columbian Exposition in Chicago in 1893, a whole new generation of American sculptors dominated the show, and the old men of marble were quite overshadowed by the young men of bronze and plaster of paris. These new young men, trained in the tradition of the Beaux-Arts in Paris, had no hesitation in consigning their Florentine and Roman elders to oblivion and proclaiming themselves the modern American geniuses of the new age.

The British rediscovered Paris as a center for art studies in the 1850s, their attention having been directed there by the well-publicized visit of Queen Victoria and the Prince Consort to the Exposition Universelle in 1855. In this decade of the century there appeared a few American students in the Paris art schools — notably Richard Morris Hunt, the architect, his brother William Morris Hunt, the painter, and the artist John La Farge. In later years all these men held very influential positions in the American art world and their advice and example sent many hundreds of American artists and architects to Paris to study in the Ecole des Beaux-Arts.

As for sculptors studying in Paris, we find that between 1855 and 1914 more than 160 American sculptors succeeded in exhibiting in the annual Salons. Some of these works were awarded honorable mention, a few won medals of the third class, and in one or two instances, medals of the second class were given to American sculptors. From about 1880 to 1914 almost every American sculptor of importance established his reputation by studying in Paris under one or more of the great French masters (Frémiet, Falguière, Chapu, Jouffroy, Dalou) and showing his work at the Salon.

In Paris the young American sculptors, painters, and architects were quite dazzled by the financial and social awards offered to French artists. The positions of prominence and power held by artists in the elaborate official fine-arts bureaucracy set

up by the government of Napoleon III gave Americans a completely new concept of the status of the artist. They were astonished by the government use of public funds in the support and encouragement of the arts, they were impressed by the annual Salon with its official ceremonies, the awarding of cash prizes, the purchase of works of art by the government, the social stir of the grand opening, the long critical accounts of the show in the newspapers.

In fact, one of the principal influences on American art in general and on American sculpture in particular during the period 1880–1925 was the organization of the official French art world under the Second Empire. American artists trained in the Ecole des Beaux-Arts, returning to America in the eighties and nineties, found things in a distressingly disorganized state, and they set about remedying the situation by setting up national organizations which they hoped would unify and regularize the whole American art world.

Prime movers in the effort to establish this on an official French pattern were the architects, a powerful group which became the dominant influence in the American art world, men who became the designers, organizers, and planners of the Chicago Exposition of 1893.

Among the groups set up about this time were the National Sculpture Society (1893), the National Association of Women Painters and Sculptors (1890), and the American Academy in Rome (1894). As the founders and charter members of these organizations grew older, they failed, as usual, to reckon with rebellious youth, and on returning to America, they chose to ignore the artistic revolution that took place in Paris after their departure. Thus the stage was set for the great battle of modern art which exploded in the faces of these conservative groups in 1913 with the opening of the Armory Show in New York.

From about 1890 to about 1925 the conservative art organizations had practically everything their own way. They controlled the distribution of big commissions, scholarships, and prizes. Their ideas dominated the management of art schools, exhibitions, art museums, and art periodicals. By all these means they established the ruling taste of the period.

The World's Columbian Exposition in Chicago in 1893, designed and decorated by this group, was, of course, essentially French in style and its buildings and gardens provided the background for a very large and most imposing display of sculpture, also French in style. Exhibiting American sculptors (e.g., Daniel Chester French, Frederick MacMonnies, Lorado Taft, Bessie Potter Vonnob) established their reputations before a larger public than any other American artists had ever known. The succeeding expositions in Buffalo (1901), St. Louis (1904), and in San Francisco (1915) afforded further opportunities for more or less the same group to work on large cooperative projects. The plaster architecture and monumental statuary of these expositions set the style of architecture and sculpture for a period of about forty years (1893–1933).

In these years the most influential men in the American art world were such architects as Richard Morris Hunt, Stanford White, Charles McKim, George B. Post, and Thomas Hastings. These men drew their power from the fact that they were in a position to make or break any sculptor, painter, mural decorator, or designer by giving or withholding commissions to decorate buildings. Their power also stemmed from their direct personal contact with their clients, the richest and most powerful men in the country: men who commanded the building of Newport palaces, railroad terminals, office buildings, banks, monuments, museums, libraries, and public buildings. Although sculptors were inclined to act like little geniuses in public, it is to be noted that when architects spoke the sculptors came running.

One of the far-reaching results of the organization of the American art world by the leading architects was the establishment of many small foundries, kilns, studios, and factories where architects could have special furniture, hardware, lighting fixtures, textiles, and sculptural ornament made to their order. As far as sculpture was concerned, the most important establishments of this kind were the Piccirilli studios in New York, where stone sculpture in any size or quantity could be turned

out by expert Italian stonecutters from small plaster models; several bronze foundries which specialized in casting sculpture in the best French manner; and a huge studio-factory for the production of terra-cotta architectural ornament.

After the Chicago Exposition of 1893 the architects, painters, sculptors, and craftsmen found themselves fully organized and ready to take on any kind of job; among the projects on which they worked were the planning and decoration of the Library of Congress in Washington, and the Appellate Court building and the Public Library in New York.

Beneath the atmosphere of cooperation and complacency in the early years of the 20th century the sculptors were actually battling among themselves for important monument commissions. Soon after the turn of the century the sculpture of Rodin began to influence the work of a new generation of American sculptors, and some venturesome spirits were soon to begin experimenting in various directions quite unsanctioned by the conservatives trained in the Ecole des Beaux-Arts.

Among sculptors, the battle between conservatives and moderns was particularly virulent, and the sculptors of the Beaux-Arts school, led by F. Wellington Ruckstuhl, fought bitterly for beauty as they saw it. However, it is to be noted that two of the leading sculptors of the time stood independent in the face of all the clamor — George Gray Barnard and Gutzon Borglum.

According to the official historians of American art, the history of American sculpture does not begin until the appearance on the scene of Augustus Saint-Gaudens in the 1870s, and much has been written in praise of him and his work. However, an examination of his sculpture makes it almost impossible to understand today how his contemporaries could have valued him so very highly as a sculptor. It would seem that in his time he was as much overpraised as Hiram Powers had been a generation before. Saint-Gaudens' imagination appears now to have been almost entirely pictorial. His sculpture is picturesque rather than sculptural and his best works are surely those low-relief profile portraits which in technique fall somewhere in that indefinite region where two-dimensional painting merges with three-dimensional sculpture. His most famous works are the statue of Lincoln in Chicago (unveiled in 1887), the statue of Admiral Farragut in New York (1881; PL. 129), and the Adams memorial in Rock Creek Cemetery (1891).

Among the most prominent sculptors of the conservative school — almost all of them trained in Paris in the Beaux-Arts style — were Paul Bartlett (1865-1925), Augustus Saint-Gaudens (1848-1907), Daniel Chester French (1850-1931), and Frederick MacMonnies (1863-1937). Among the well-known younger men who carried on the traditions of the French school, James Earle Fraser (1876-1953) and Paulanship (see below) should be mentioned.

A survey of the entire list of American sculptors from 1776 to 1913 brings one to the inevitable conclusion that although there were many very competent men and women carving out their careers as sculptors, very few of them ever attained the high goals for which they all aimed. It has been suggested that perhaps only two men should ultimately be considered as approaching greatness as sculptors: George Grey Bernard (1863-1938; PL. 129) and Gutzon Borglum (1867-1941). Barnard's chief works are the colossal groups that decorate the Pennsylvania State Capitol building at Harrisburg and the statue of Abraham Lincoln in Cincinnati; equally important is the extraordinary collection of medieval sculpture from France that he brought to America for the benefit of American students of sculpture. This collection was bought by the Metropolitan Museum of Art and is now displayed in The Cloisters with other medieval works of art. Gutzon Borglum attained the age-old ambition of many sculptors by carving whole mountains into sculptured memorials, at Stone Mountain, Ga., and at Mt. Rushmore.

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b. 1913 to the mid-20th century. The changes that revolutionized the field of American sculpture in the first half of the 20th century reflect profound shifts in social structure and ideology and in the cultural outlook of the sculptor as well as in his means of production and relationship to his audience. So rapid was the influx of new ideas after World War I that it is little wonder that it has taken several decades and generations of artists to absorb them and to produce a body of vital and mature work.

Until about the mid-twenties, American sculpture conformed to a "hothouse" esthetic ideal based on the European "grand tradition" and as remote as possible from the raw energies, dynamism, and urban-industrial patterns of American life. The split between art and life was reflected in the division between the roles of artist and craftsman, a division that separated the sculptor from the actual execution of his work, which was in the hands of others. Sculptors trained either in Paris at the Ecole des Beaux-Arts or at the American Academy in Rome (occasionally by those who had studied abroad) found ready employment with the influential and prominent firms of architects trained with a similar neoclassical background. With lavish commissions assured, such sculptors set up impressive establishments employing a corps of skilled assistants and an array of mechanical devices such as "pointing" machines.

Subjects for such sculpture were intended to be heroic, usually historical, and obviously dramatic. In the hands of minor artists they also became literary and sentimental. A few sculptors, trained in the Rodinesque tradition (but responsive to the examples of Daumier and Meunier as well), tried to introduce an informal manner and native flavor. Mahonri Young (1877-1957), Abastenia Saint Leger Eberle (1878-1942), and Charles Haag (1867-1934) are notable among those who turned to genre themes and adopted an impressionist treatment.

Notable among the pupils of Rodin was Malvina Hoffman (b. 1887), a remarkable personality who tempered her essentially academic heritage by her breadth of mind and phenomenal capability in her craft. She is known internationally for her vast sculptural project for the Hall of Man in the Field Museum (now the Natural History Museum) in Chicago, a study of racial types which took the sculptor to the remotest parts of Asia and Africa as well as Europe and the Americas. Among the artists of her generation whose work became known to many Americans was the Yugoslav sculptor Ivan Meštrović (b. 1883), whose rugged, profusely detailed, and dramatic work had considerable influence in the United States between the wars (PL. 130).

Most successful and influential of the conservative, traditional sculptors was Paulanship (b. 1885), whose ideas dominated the powerful National Sculpture Society, a bulwark of conservatism, which counted among its members most of the men who were public figures in the field. Trained in the American Academy in Rome, Manship had tempered his neoclassical heritage by deft simplifications and by incorporating into suavely modeled bronze surfaces elements of pattern reminiscent of the archaic Greeks (PL. 130). His *Dancer and Gazelles* in the Toledo Museum typifies the decorative treatment which exactly accorded with the new emphasis on design (usually interpreted as linear, schematic, and elaborated with surface pattern) that was sweeping all fields, especially architecture, in the twenties. The *Atlas* by Lee Lawrie in New York's Radio City is an even more obviously decorative adaptation of the Manship style.

Manship had his first New York exhibition in 1913, the very year of the famous Armory Show, which did so much to open the eyes of Americans to the revolutionary art movements abroad. As the new influences gained headway and were consolidated in the twenties and thirties, the battle was joined between the conservatives, represented by the National Sculpture Society, who generally resisted the new developments, and a growing number of rebels, grouped informally in such organizations as the Clay Club and the later Sculptors Guild (both in New York) or fighting individually for some non-academic style or personal expression.

Gaston Lachaise (q.v.) began working for Manship and

other sculptors, executing details of their work. Born in France and trained in Paris at the Ecole des Beaux-Arts, he came to America in 1906, spent most of his creative life there, and so may be claimed as an American sculptor and perhaps the greatest the country has developed. His first independent exhibition did not take place until 1918. In the interim, while working for others, he developed a style of his own. His sculptural obsession, like Maillol's, was the female nude, a uniquely lush woman who was the very embodiment of fertile womanhood (PL. 130).

Another *émigré* of great influence was Polish-born Elie Nadelman (1885-1946), who came to the United States in 1916 from Paris, where he was already celebrated as the originator of a figure style based on geometric elements. One of the rare successes of nonacademic sculpture was Nadelman's American debut in a fashionable Fifth Avenue gallery in 1918. His heads and figures, composed of spherical volumes and impeccably carved in marble or modeled and cast in bronze, were acclaimed by critics and acquired by society people. They influenced many artists, among them Hunt Diederich. Although Nadelman's geometric element was the curve rather than the angle (PL. 130), he insisted he had inaugurated cubism. Whether or not this is true, he must be regarded as a pioneer American abstractionist. He was also one of the first to develop an interest in folk sculpture. By 1919 he had become the fashionable portrait sculptor of the day, and in the self-imposed obscurity of his later years he became obsessed with doll-like figures reflecting various archaisms.

A much more controversial figure and successful portrait sculptor was an expatriate American who settled in London and startled the English with his radical, eclectic approach to design for public monuments. Jacob Epstein (q.v.), born in New York in 1880, grasped the expressionist possibilities in Rodin's way of modeling a clay surface with nervous pellet-built touches, and he developed this manner in a portrait style of marked originality. In his dynamic bronze portraits, both distortion and light-chewing surfaces serve to heighten resemblance (PL. 131).

In 1913, the New York Armory Show exploded in the face of the complacency of official American sculpture. This handsomely installed, well-publicized, and (surprisingly) financially successful exhibition disclosed the whole astonishing range of European experiment from the smooth near-geometry of a Brancusi head to the Gothically elongated forms of Lehmbruck and, in between, work by Duchamp-Villon, Bourdelle, Epstein, Manola, Gauguin, Matisse, and other rebels.

It would be only a half-truth to say that these innovations represented a discrediting of Rodin and his influence. Rejected was his naturalism and extreme romanticism, his disregard for the tectonic aspects of sculptural form, his impulse to overcome the qualities inherent in a material. But several of the Armory Show artists had studied with Rodin and were to amplify certain of his imaginative freedoms, his sense of poetic metaphor. Hildebrand, the German contemporary who first defined the theory of direct carving, was a pupil of Rodin.

From the 16th to the 19th century, the effort of successive sculptural styles had been to conceal the origin of stone sculpture and hide the evidence of the carver's hand, his tool, his labor, and on the other hand to release forms from the column or block. Now such artists as Gauguin, Picasso, and Brancusi were reversing the process. Their aim was to restore the "stoniness of stone," its mass and density.

Moderns found authority for the direct attack on materials when they looked past late Greek examples that had inspired post-Renaissance art, to the more ancient cultures of Egypt, China, India, Mesopotamia, and pre-Columbian Mexico, as well as to Gothic and Romanesque expression. The movement to direct carving gained a special impetus from the discovery of African Negro art.

Following the Armory Show, the most important sculptor to emanate from a newly generated contemporary spirit in art was William Zorach (b. 1887), who accepted as the key-stone of his art this more puristic emphasis on direct carving in wood and stone. He had exhibited paintings at the Armory Show after two years of study in Paris and in art schools in

the United States as well as an earlier period of work as a lithographer. It was not until 1924 that Zorach exhibited as a sculptor, an area in which he was largely self-taught. His sculptures, such as the *Mother and Child* in the Metropolitan Museum, have a monumental scale and formal density only possible in the direct cutting of the marble block by the artist himself (PL. 130).

Among the direct carvers, John Flannagan offered a particularly moving example of the oneness of idea and material; he restored to the animal subject its ancient dignity and meaning (PL. 131). Flannagan turned to field stone rather than to the expensive quarried block as the means to express his pantheistic imagination. Although his goat or young bird forms seem so perfectly adapted to the compact shapes of the boulder that one is scarcely aware of what has been taken away, this effect is not the result of accident but rather of his abilities to see, latent in the stone, a form already existing in his imagination. His compact forms were expressive through mass rather than through silhouette, as was much of the animal art of ancient cultures. Artists who have developed this area expressively, and with some abstract emphasis, include Heinz Warneke and the Californians Benjamin Bufano and Pegot Waring.

In the late twenties and thirties, a number of American sculptors of considerable talent began to come to maturity in an artistic climate more sympathetic to innovation but rife with undigested eclecticism. With the example of ancient cultures and a wish to project a more symbolic content, many sculptors, generally adherents to the credo of direct carving, adopted drastic simplifications of figure subjects. Some pursued a poetic content through mild distortions of the nude, usually female, or through figure groups in which forms were compressed to retain the density of the original mass, with an accent on a counterpoint of fluid rhythms. In this group are Hugo Robus, Chaim Gross (PL. 130), Ahron Ben-Shmuel, Oronzo Maldarelli (PL. 130), Vincent Glinisky, Marion Walton, Henry Kreis, Koren Der Harootian, Cleo Hartwig, and Emma Lu Davis. Some, like Hugo Robus, carried over into work in bronze simplifications and the accentuated fluidity more commonly associated with the innovations of the carvers.

The direct attack on material, so stressed at this time, did not always mean carving. José de Creeft (b. 1884), who also worked in stone, produced some notable heads of beaten lead (PL. 131), and Saul Baizerman (1889-1957) created entire figure groups as well as single figures from hammered bronze or copper with a stippled surface of poetically impressionist effect.

A new range of materials and techniques in sculpture was opened up by the example of European artists who came to the United States at this time and became influential teachers. Carl Milles (1875-1955), Swedish sculptor who taught for many years at Cranbrook Academy in Michigan, introduced a somewhat limited modern point of view. More radical was the influence of two dynamic experimenters. Alexander Archipenko, born in Kiev in 1887, founded the Ecole d'Art in New York in 1923 and publicized a new sculptural concept — that concave surfaces could be substituted for those convex in nature. This idea was also important in the work and teaching of Russian-born Ossip Zadkine (b. 1890), who was a more sporadic visitor to the United States. Hungarian László Moholy-Nagy (q.v.) demonstrated the potentialities for sculpture of plastics, glass, and many other industrial materials explored initially at the Bauhaus in Germany, where he had taught.

Many who began work during the years of the Great Depression were moved to social expression in their work. A good deal of this work reflected social consciousness and, understandably, bitter criticism of the established order. Minna Harkavy's *American Miner's Family* (PL. 131) is a tribute to the often miserable or tragic fate of these underground workers. David Smith's *Medals of Dishonor* is further evidence of the impact of the times on a deeply sensitive artist.

A social orientation was often implicit, too, if less directly, in the work of sculptors who revived various genre subjects with the addition of abstract or expressionist distortions — the exaggerated proportions or angular faceting notable in the figures of Nathaniel Kaz, Milton Heald, Harry Wickey, Max Kalish,

Nat Werner, and Berta Margoulies. More humorous in intention were the stylized cyclists and stevedores by John Hovannes.

Although direct carving by this time attracted most artists, a number continued to work in bronze and other mediums in a basically realistic manner but with personal interpretations of a lyrical content — among them Concetta Scaravaglione and Donald De Lue. At the same time, use of more extreme expressionist distortion, based on Gothic or Romanesque forms, opened up new possibilities in religious sculpture for Charles Umlauf and others in a field little developed since the earlier religious sculpture in bronze by Alfeo Faggi. Among artists long established as carvers who experimented with more abstract idioms were Robert Laurent, who eventually turned to linear constructions in metal after his earlier work in alabaster and stone, and Leo Amino, originally a wood carver, who developed fluid abstract forms in various plastics.

Two sculptors who came into prominence in the later twenties and early thirties consistently developed highly individual styles which had their inception in the school of Paris. Isamu Noguchi (b. 1904), born in Los Angeles of Japanese parents, after study in the East Side Art School in New York, went to Paris in 1927–28 to study with Brancusi. The precise hieratic purity of Brancusi's stone and metal sculptures has remained the chief inspiration of Noguchi's otherwise highly personal art (PL. 132). Latterly he studied in Japan under expert ceramicists, and the result is a series of terra cottas of extraordinary range of imagery and wit.

Alexander Calder (q.v.), son of an architectural sculptor of considerable repute, also went to Paris in the late twenties and there came under the influence, among others, of Mondrian and Miró. Combining both these sources of inspiration with his own Yankee ingenuity, humor, and engineering skill, he practically invented a new form of mobile sculpture that, however much it has been imitated since, continues to be one of the most original expressions of any contemporary American artist (PL. 132).

While a constant trickle of Americans had, like Calder and Noguchi, found their way to Europe and there made contact with radical points of view of the French school, the German expressionists, and the Bauhaus experimenters, it was not until the years just prior to and during World War II that stay-at-home artists had a chance to absorb such new directions from the famous *émigrés* who found haven in the United States. These artists, coming at a time when American sculptors had attained considerable maturity and had digested the ideas that had overwhelmed them earlier in the century, created an intensification of interest in sculpture as a medium equal to painting.

Jacques Lipchitz (q.v.), one of the great sculptors of the time, has been in the United States since 1941. The example of his poetic fire, his creative energy, and his all-round mastery of the craft of modeling in the most imaginative Rodinesque and cubist and expressionist traditions has left an incalculable impression upon sculpture in America (PL. 131).

The influence of innovating teachers like Moholy-Nagy and Archipenko became more extensive, and added to it was the impact of the German painter Hans Hofmann, not a sculptor but a teacher whose ideas affected workers in many mediums. Other painters also had an effect on sculpture, especially the constructivist Mondrian (q.v.), resident in the United States from 1940 to 1944, and, at the opposite pole, André Breton, leader of the surrealists and a powerful defender of the role of the unconscious and dream imagery in all the arts. The extension of collage into three-dimensional constructions, both from cubist and dadaist-surrealist impulses, tended to blur the line dividing painting and sculpture, while introducing extremes of machinelike technological constructions on the one hand, and on the other, convulsively organic, biomorphic shapes (from the surrealists). Naum Gabo (q.v.), pioneer Russian constructivist who came to the United States in 1938, demonstrated in his work the potentialities of plastics in sheets and threads in abstract forms which have had wide influence (PL. 132).

The new "iron age" in sculpture (including also bronze and steel) that was ushered in at the close of World War II exactly

reversed the formal means of the "stone age" of direct carvers that had followed World War I. Neither change can be explained by technical interest alone. Spurred by an anguished search for identity was the drive to escape from mass, to pierce, penetrate, and deny solidity, to cast off traditional materials and techniques. The artist turned away from the whole paraphernalia of esthetic production to adopt the tools and methods of the forge and the assembly line. Roszak said, "I like to feel that material which can be shaped at white heat . . . is the best means for implementing the spirit embodied in the work of this period." David Smith trenchantly summed up the contemporary attitude: "The metal itself possesses little art history. What associations it has are those of this century: power, structure, movement, suspension, destruction, brutality."

The idea of "drawing in air" with metal, of slicing and threading space with sheets and wires was not entirely new. Lipchitz had created airy sculpture from ribbonlike cast shapes in bronze; Gabo and others had explored transparencies and threaded constructions. But the deferred results, the techniques, and planned stages that these demanded were alien to the urgent search of the younger artists for the means of shaping intractable metals with immediate, arduous labor. They found the example they needed in the innovations of two Europeans who did not come to the United States: the Spaniards Pablo Gargallo and Julio González, both pioneers in working metals as the blacksmith does, without the intervening steps of modeling and casting. Their accomplishment in creating sculptures with wrought iron, especially that of González, the less decorative of the two, whose work preserves the rough, brutal quality of the iron itself, had enormous impact on a vital group of American sculptors. Because their aim was not simply to construct but to forge metal elements into an inseparable unity, they equipped themselves with the welder's acetylene torch, with hammer and the equivalent of an anvil, with metal in sheets and rods.

The oldest in point of accomplishment and originality, David Smith (b. 1906), freely admits his youthful debt to González. In the course of an extraordinarily prolific and creative career he has explored more territory in this realm of welded sculpture than any of his contemporaries. Furiously inventive, antiesthetic in approach, his search has led him to use all kinds of industrial equipment and materials, with particular relish for such non-esthetic ingredients as boiler plates and discarded parts of farm machinery. In Smith's landscapes, animals, interiors, or abstractions, never literal, inscribed in space with a taut calligraphy in steel, he has presented some of the most startling and complex imagery of modern sculpture (PL. 132).

Another welder and image maker, Seymour Lipton (b. 1903), after long years of agonized representation of the forces of good and evil, turned around 1950 to the hopeful processes of regeneration displayed in blooming plants. Combining these with shell and machine shapes, he has produced convoluted sheet metal forms of haunting presence and considerable monumentality (PL. 131).

Working with a more surrealist intention, Herbert Ferber (b. 1906) originally developed bristling configurations of twisted and spiky parts, later softened them to admit abstract forms of flamelike reference.

For these welders the new, more direct techniques offered not only a material of sufficient tensile strength to lend itself to the airy forms of a probing imagination — but also deliverance from the costly and time-consuming processes of the foundries. Also, some foundries, in the face of decreasing demand for public monuments, had gone out of business. Inevitably, however, as artists explored the possibilities of metal, some moved away from the severity of the early welded sculpture to more elaborate and refined techniques that afforded greater surface variation.

Theodore Roszak (b. 1907), who began as a geometrical constructivist, under the impact of World War II developed a unique and exacting method of hammering and brazing bronze and brass over solid steel forms welded onto a steel armature. The modeled and hammered solids that he creates by such arduous labors are in contrast to the linear forms favored by

most metal sculptors (PL. 131). Organic in silhouette, tortuously agitated in surface, they may suggest plant or animal life or employ ironic metaphor to comment on human endeavor as in the *Specter of Kitty Hawk*. A disquieting dream content is also implicit in the abstract surrealist images of Calvin Albert, who has pioneered with various forms of molten metal, pouring, spraying, or heat-modeling lead alloys, or casting the fluid metal in various molds to form parts ultimately welded into haunting configurations. David Hare (b. 1913), who previously worked with wiry elements in weaving or coiling formations, has extended in a personal way the surrealist tradition of dream-induced images. Lately, by inventing a process of casting thin, broken skins of metal, he has been able to suggest the transience and decay of human flesh. Peter Grippe (b. 1912), using a more traditional method of casting, explores intricate and often symbolic fantasies through the spindly, modeled shapes introduced by Lipchitz. Also more interested in subject than in technical experiment is Mary Callery (b. 1903), who in the early forties first showed figures pulled out in length until all parts were reduced to a thin, tubular module, a form which gained in rhythm and mobility what was excluded in weight and volume.

The constructive approach of Gabo, early Giacometti, and Calder received a fresh impetus with the revival of direct work with metals. The geometrical-constructivist tradition has been adapted by Richard Lippold (b. 1915) to serve his own lyrical and decorative purposes in such jewellike wire inventions as his silver *Full Moon* at the Museum of Modern Art and golden *Sum* at the Metropolitan Museum, both examples of dazzling brilliance of technical execution.

A variety of techniques has contributed to the labyrinthine "space" sculptures of Ibram Lassaw (b. 1913) who found in metal wire the strength and malleability lacking in his earlier experiments with plaster, wood, and other materials. Working over a structure of bent wires, a sort of improvised armature, he welds a surface of bronze or copper in varied textures and colors (the latter, which he feels important to his work, obtained by applying acids) (PL. 132). Sidney Gordin (b. 1918) has also explored wiry arabesques in contrasting metals after his initial work with angular constructions in stainless steel. A final example of the continuing cross-fertilization of the opposing poles of form derivation — organic-curvilinear and technological-angular — is offered by the stainless-steel sculpture of José Rivera, who has marshaled industry's brash material into graceful, looping, tubular forms of lyrical appeal.

Absent from the work of the fifties is a stress on any one material or technique comparable to the earlier insistence on direct carving, or the subsequent emphasis on welding and brazing. Among advanced sculptors it is possible to discover individuals working in almost every known technique, including modeling and casting, wood and stone carving. Wood is being used by various sculptors in strikingly different ways: in traditional carving techniques by Raoul Hague, who develops the Brancusi direction of compressed organic forms in abstract and monumental sculptures of power and originality; in bizarre, carved, jointed and lashed-together constructions by Frederick Kiesler; in columnar images of shaped wood by Louise Bourgeois; finally, in compartmented constructions of mural scale by Louise Nevelson, whose black-painted, carved, and found shapes invoke the forest rather than the factory reference of earlier constructivist artists.

The most pervasive and sustained influence of the fifties has been that of primitive art. Esteemed in the early decades of the century because of a recognition of an underlying geometry, African Negro, Oceanic, and other tribal arts have become valued more for the primitive artist's power in transmitting the impact and mystery of emotional states. Their often spontaneous projection of states of mind, unsophisticated but charged with a vivid unconscious content, has encouraged artists to seek access to images arising from less conscious and rational layers of feeling, and to welcome into their work a symbolism not dependent on literary or historical reference.

The development of abstract, yet symbolic sculpture forms has opened up new possibilities for employment of modern

sculpture in synagogues (where specific images are avoided) and in some churches and civic memorials. Commissions for non-descriptive religious sculpture have produced outstanding work by Herbert Ferber, Calvin Albert, Sidney Gordin, etc.

In fact, the situation of the fifties reverses that of the twenties: the experimental artist often wins over the academically conservative in important commissions. Notable are Harry Bertoia's monumental screen for the Manufacturers Trust Company, Noguchi's fountain sculpture for Lever House, José Rivera's abstract sculpture for the Dallas Hilton Hotel, and Constantine Nivola's sand-cast relief sculpture for Olivetti.

Although the abstract or expressionist-surrealist innovations that absorb the majority of our vital sculptors have not obtained wide public recognition, they are increasingly accepted, especially when associated with architecture. The radical, inventive forms of such sculptors as David Smith, Seymour Lipton, Alexander Calder, and others resulted in a new creative level for American art abroad, and in the face of the failure of most conservative-traditional sculptors to produce a vital expression of their own, it seems likely that the innovators will continue to extend both their influence and public acceptance of their creative ideas.

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Dorothy Gees SACKLER

Parts of this article incorporate material prepared by A. C. Ritchie

c. *Folk sculpture*. Although the accomplishment and originality of the professional sculptor in the United States during the early period are somewhat limited, there is a whole body of folk sculpture which, in the words of Holger Cahill, "... has significance for us as a genuine expression of the art spirit of the American people, and as a demonstration of the fact that talent has never been lacking in America, even when opportunities for the study of art techniques have been very limited."

These works by nonprofessional and anonymous artist-craftsmen-carpenters, wood carvers, shipwrights, cabinetmakers, stonecutters, blacksmiths, and others, reflect the feeling and thinking of the ordinary man rather than the expression of a culture limited to a small group. Stemming from a craft rather than a studio tradition, these works have relatively little to do with the leading art movements of any period. They are direct and spontaneous, abstract in their economy of form rather than naturalistic — although always related to the life of the time.

This ignoring of academic and technical standards (as well as surface naturalism) results in a more vital type of reality — a reality bound up with what the artist feels and knows, rather than with what he merely sees. In this way also American folk art has significance as mirroring "... the senses and sentiments of a community, and as an authentic expression of American experience."

Of the wide variety of objects made by the American folk sculptor one may mention the ship carvings (figureheads and ornaments) of such seaport towns as Salem, Boston, New Bedford, and Portsmouth; the carved wooden toys fashioned by the Pennsylvania Germans; the carvings for circus wagons,

many of which were made by craftsmen from Switzerland; and the colorfully solemn carousel animals which were made for a long time in Abilene, Kansas, and Nashville, Tennessee. There are also the gravestones in old New England churchyards, the cigar-store figures and other trade signs, the weather-vanes, decoys, and various miscellaneous items for house and garden, including portraits.

Modern American artists have been attracted in various ways by this material, spurred on partly by their own needs and partly through the exhibitions organized first by the painter Henry Schnakenberg (Whitney Studio Club, New York, 1924), and then by the historian and administrator Holger Cahill (Newark Mus., N.J., 1931, and Mus. of Modern Art, N.Y., 1932). They have found in this material a freshness and vitality, a humor and expressiveness that have proved invaluable both as inspiration and as a means for establishing kinship with the past of their own country. Such artists as Elie Nadelman, Robert Laurent, and Yasuo Kuniyoshi were among the first to be interested in and to buy American folk sculpture. Here they have seen living proof of the existence of an American artistic tradition dating back to the first settlement of America by Europeans — a tradition still vital in the mid-20th century.

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Bernard S. Myers

THE DECORATIVE ARTS. *a. 1625 to 1850.* The story of the first 200 years of American decorative crafts has two themes. First is the gradual development of British traditions and fashions, modified and amplified from other sources. Second, possibly more significant, is the effect of North American climate, materials, and social structure, which occasioned variations despite earnest efforts to follow the European models.

As colonial life itself grew more complex, craft specialists became increasingly important. Metalsmiths, potters, woodworkers, cordwainers, and weavers were among the first settlers, yet necessity limited the practice of special skills to non-growing seasons. The prevailing absence of occupational specialization probably induced that freshness of approach which characterizes the work of the colonial craftsman.

In view of the rigors of the new environment, it is remarkable that such specialized sumptuary arts as those of the cabinetmaker and silversmith had become established before 1675 in New England, in the Dutch communities to the south, and later in those between the Hudson and the Delaware rivers. By mid-18th century, a flourishing craft production could show quality to equal London imports. During the colonial period, the development of crafts other than those of the silversmith and cabinetmaker was discouraged by governmental regulations in favor of British manufactures. Until well into the 19th century, American craft production was centered in the northern and central Atlantic states. In the development of American decorative arts, successive stylistic characteristics are paralleled by four stages of political and social evolution (1625-1725).

The age of settlement is characterized by the continuation of medieval traditions in structure and design and by the modest but self-respecting standards of the English yeomanry. Living rooms, finished in lime plaster or vertical sheathing in pine, were appropriately dominated by huge open fireplaces. Later, painted paneling appeared, and other more deliberate decorative effects. Like the paneling, furniture (first of oak, later of pine, maple, ash, or hickory) was painted wholly or in part with earth colors and black. It consisted largely of chests or boxes — sometimes with drawers and stands — small tables, boards on trestles, stools, and benches. Chairs, particularly with armrests, and presses or clothes cupboards, were marks of dignity and affluence. This furniture was foursquare, of traditional stile-and-rail construction, which could be made by anyone skilled in the use of a few simple tools. The lathe was used for turning table and chair legs and the applied ornaments

introduced at the end of the 17th century. Simple two-plane or scratch carving was developed, particularly in Connecticut and Massachusetts, about 1700. Late in the period, Flemish or S scrolls appeared in the underpinnings and backs of chairs and daybeds, as well as caning, a resilient support for cushions.

A few early furniture makers, such as Thomas Dennis of Ipswich and Nicholas Distrowe of Hartford, have been identified, but most remain anonymous. They followed English precedent closely, but in the "Hadley" chests of the Connecticut River Valley a distinctively local form was manifest by 1700 (PL. 133).

In Boston and New York, silverware of subsequently unsurpassed quality was produced. Jeremiah Dummer and John Coney of Boston (PL. 134) made outstanding pieces in the late Stuart style, and their contemporaries of Dutch and Scandinavian origin in New York created distinctive designs neither wholly English nor Dutch in inspiration.

The age of colonial consolidation (1725-1775) demonstrated its relative prosperity in elaborate interiors reflecting the changes of English fashion. Rooms were often completely paneled in the classicized baroque manner of Sir Christopher Wren, with pilasters at windows, doorways, and chimney breast. This woodwork was commonly painted in one or two tones, grained and marbled, or occasionally accented by polychrome ornament. Imported stuffs and woven or embroidered rugs began to replace plain homespun and sanded floors, as walnut and mahogany replaced the simple woods of the previous era.

In furniture, a curvilinear style dominated, without the extravagances of European rococo which suited neither the colonial economy nor temper. The simple linear rhythms of the Queen Anne style were basic to American design until after the Revolution.

The principal centers of American style in cabinetwork at this time were Philadelphia and Newport, R.I., though the "correct" contemporary products from Boston and New York were qualitatively equal. The Philadelphia high chest or high-boy (PL. 133), and the "block front" used by the Goddard-Townsend family in Newport were uniquely American. The development of furniture types to meet the needs of a complicated social ritual led to the full development of cabinetry as distinct from joinery. Cabinets and bureaus replaced chests, while chairs, settees, and small tables assumed domestic importance. At this time the Windsor chair (PL. 134) became naturalized in the colonies, where it was refined and diversified.

In silverware, Queen Anne forms remained in vogue, though, in due course, the vigor of the style was somewhat sacrificed to elegance, as in the work of the younger Edwards, Burts, and Hurds of Boston, Adrian Bancker of New York, and Philip Syng, Jr., of Philadelphia.

What might be called an "age of national adolescence" (1775-1820) followed the American Revolution. It is marked by a heightened classicism paralleling that which appeared in England in the 1760s, and somewhat later in France, as a repudiation of rococo frivolity. In America, the classic revival was felt to represent the simplicity and sobriety of democratic thought.

Paneling largely disappeared, and now special emphasis was given to cornices, mantles, and door and window trim. These were enriched by molded or carved detail, later translated into the "drill and gouge" work of the American country carpenter. Walls and woodwork were painted with light tones, or walls were hung with imported printed papers or fabrics; cottons, printed in England and France with classic or anecdotal motifs, came into general use.

In furniture, carving and the S curve gave place to straight lines and segmental curves; blond woods — satinwood, maple, and fruitwood — either supplemented mahogany or relieved it with inlays, according to the fashions of Hepplewhite and Sheraton. Wood was often painted over entirely. Later, Napoleonic influence brought a preference for heavier forms and boldly figured red mahogany, and heavy rich colors in general. Technically, the craft of the American cabinetmaker reached its height at this period, though ornamental intricacies tended to decrease the vigor of design.

The prosperity of many seaports now rivaled that of older centers; thus the names of such craftsmen as McIntire of Salem, Shaw of Annapolis, and their Charleston contemporaries ranked with those of Seymour of Boston and Phyfe of New York (PL. 133).

The fervor for classic forms tended somewhat to standardize and desiccate the work of the silversmiths while giving it an obvious refinement. The increased commercial and speculative wealth of the seaboard found its chief expression in elaborate tea and coffee services about which social life had already begun to revolve before the Revolution. Silver by the patriot and industrialist Paul Revere is typical of this era (PL. 134); a certain dryness underlies the delicacy of his forms and the sparkle and grace of his bright-cut engraving. The quality and quantity of pewter wares now also developed rapidly.

During this period, American craft arts expanded into new fields. Stiegel, Wistar, and Amelung were the first names in American decorative glassware. Commercial weaving and printing of textiles now commenced. The folk potters of Pennsylvania (many of German origin) produced slipware of notable quality; Philadelphia fostered an American porcelain production. Rolling mills began production of sheet metal, and attempts were made in every direction to increase native manufacture of materials or objects formerly imported.

The results when aimed at fashionable taste were of relatively minor esthetic importance; it is mainly in folk arts, in the forthright, functional articles and utensils made for everyday use, that significant contributions were made.

The age of romanticism and territorial expansion (1820-50) is politically and artistically complex. Ideas and methods based on hand skills and mercantile economy were forced aside in an increasingly industrialized society. Two types of romantic fervor clashed, one nostalgic for an ideal of the past, the other eager for the future and impatient of tradition's shackles.

The almost fanatic adoption of Greek place names and Greek motifs in architecture and decoration marks the romantic identification of the Greek spirit with the ideals of the republic. Architecturally more lasting than in Europe, the Greek vogue had limited decorative appeal. It was literary and inflexible by nature, and so out of harmony with growth and progress.

In furniture and silver the Greek fashion appears chiefly as a simplification of the heavy-handed "American Empire." Greece was replaced by a "Waverley Novel" Gothic, which at mid-century was already challenged by a revived rococo. The height of this style in the United States is well represented by the work of John Belter of New York. Belter used shell-like wood laminations with intricate, pierced carvings; his walnut and rosewood tables, chairs, and couches are prodigies of skill.

By 1850, craft production of ornamental and useful objects had, with rare exceptions, been superseded by factory processes geared to mounting popular demand for cheap imitations of elegant objects. Craftsman and mechanic became increasingly indistinguishable in America.

b. The craft arts from 1850 to the mid-20th century. The Centennial Exposition of 1876 demonstrated the complete schizophrenia of the decorative crafts of the later 19th century. The extraordinary ingenuity and wide stylistic repertory of designers called for the highest productive skill, with results that perfectly express the serious purpose and utter esthetic confusion of the times. Only when the designer is absent does the mechanic occasionally assume the stature of a craftsman in industry. Almost literally, traditional craft arts were driven into the hills where industrialization was unknown, or into farm and foundry where utility alone ruled.

The Morris-inspired Arts and Crafts movement in England had its repercussions in the United States in the 1880s, as instanced by the glasswork of Louis C. Tiffany in New York and the establishment of the Rookwood pottery by Maria Storer in Cincinnati. Both were esthetic protests against the debased quality of factory production, as were many semiprofessional or amateur craft groups set up in the eighties and later. About the turn of the century the Art-Nouveau and *Werkbund* movements of Europe stirred Americans also to a more decided

attempt to establish the artist-craftsman as a productive factor. This, together with the failure of mass production to meet the entire needs of an increasingly art-conscious public, supported the success of such artists turned craftsmen as Volkmar, Herter, Diedrich, and Poor, and also that of imported European decorative craftwork. These craftsmen were followed by the contemporary antinaturalist movement in art which began seriously to affect American taste about 1930, emphasizing the dependence of design on material and process, and generally reacting against clutter and meaningless ornament.

After World War II, occupational therapy encouraged interest in the handicrafts. Societies of artist-craftsmen and museum exhibitions abounded. Mechanical aids were no longer banned as heretical, and a more rational approach to the problem of craft production encouraged the hope that a practical place in the industrial economy might be found for artist- or designer-made crafts, supplementing the mass product of the composite industrial process.

Recent exhibitions, particularly those of the new Museum of Contemporary Crafts in New York, seem to show the most successful and widely practiced crafts to be those of the potters, textileworkers, enamelers, and jewelers, with the woodworkers and metalsmiths relatively less important.

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Meyric R. ROGERS

c. Machine technology. Modern American design for industry developed in the economically strenuous 1930s. It has replaced much period styling and plain engineering design, it has also aroused international emulation and criticism. To understand these happenings, the industrial roots of American design should be traced. Independence from Great Britain, achieved by the United States in 1781, removed mercantilist restrictions; the new country grew so fast in area and population that it had to evolve its own ways to survive and thrive—processes that suited Jacks-of-all-trades and abundant, transportable commodities. Basic mass production began in the 1790s, namely, dependable interchangeable parts at Eli Whitney's arms factory and endless-belt production lines in Oliver Evans' flour mills. Annual national industrial fairs with awards were started in 1827 by the American Institute of the City of New York. The same body, in 1848, aiming to counteract imports, opened the first American school for "the Arts of design." The lines of American clipper ships won the admiration of the world.

A perceptive résumé of this aspect of early design in the United States was made by the American novelist James Fenimore Cooper, who sojourned abroad. In *Notions of the Americans* (1828) he wrote: "I have seen more beautiful, graceful, and convenient ploughs in positive use here, than are probably to be found in the whole of Europe united. In this single fact may be traced the . . . character of the people, and the germ of their future greatness. Their axe is admirable for form, for neatness, and for precision of weight . . . the actual necessities of society supply an incentive to ingenuity and talent, that are wanted elsewhere . . . the vast multitude of their in-

ventions ought to furnish food for grave reflection to every stranger The American manufacturer has to contend with one difficulty . . . unobstructed commerce . . . the consumer is accustomed to . . . the best articles." By mid-century, Emerson and his friend, the sculptor Greenough, could state the principles of American design vigorously, in essentially ethical terms. At this same time, in Europe's first international exhibition, at the Crystal Palace, Americans were showing light, plain carriages, mass-produced rifles, and spring-based chairs with success. McCormick's reaper and Singer's sewing machine emphasized the American purpose stated in the exhibition catalogue: ". . . increasing the number and quantity of articles suited to the wants of the whole people." Europeans observed that "the genius of this new nation is necessarily mechanical" and that American production had "... a character distinct from that of other nations."

The Civil War accelerated American productivity; from 1865 until the turn of the century American industry, like the country generally, was content to follow European fashions; the earlier achievements and reputation of United States design were forgotten. Underneath many imported styles — rococo, classical, medieval, Japanese, Eastlake — American ingenuity continued to flourish; it was the heyday of patent products.

Before 1900 the dichotomy in the Western world between artistic styling, on the one hand, and production and living habits on the other, could no longer be sustained. Reform movements were astir in design, seeking to replace period styles by a revival of craftsmanlike attitudes and a distaste for imitations of the past. Early in the 20th century, Henry Ford stepped up mass production to manufacture his Model T; Orville and Wilbur Wright's invention necessitated a new science of shapes for speed; Frank Lloyd Wright lectured on "The Art and Craft of the Machine," giving fresh impetus to the ethical ideals of American design.

Until 1925, there was little change in American design for industry; practicality and ingenuity were overlaid, more or less, with period styling. Modern French and Viennese decorative trends became popular in the mid-twenties, preparing the ground for local modernists. In 1926 Harley Earl began a long period of work for General Motors, as chief of automobile design. That year Raymond Loewy styled the Hupmobile. Thus two of the most active and varied United States design careers began, and America's best-known design activity. Two cars by Ford are considered among America's handsomest, the 1940 Continental and the 1954 Thunderbird (PL. 136).

Many industries tried modern designers after the 1929 stock-market crash. The success of Paris *moderne* indicated that timely design might also move American-made products. The American Union of Decorative Artists and Craftsmen, formed in New York, held influential exhibitions in 1930 and 1931. Among early New York designers for industry Donald Deskey and Gilbert Rohde were long prominent. In Chicago the great mail-order house Montgomery Ward began in 1931 to redesign its catalogs and wares under the direction of Anne Swanson. Two years later the Chicago centennial fair featured a brash, but decidedly popular, modern style. From these two sources sprang Middle Western design leaders such as Jean Reinecke and Dave Chapman. In 1931 Los Angeles attracted Kem Weber and Jo Sinel, and an active design school opened there. Russel Wright's well-known design activities began in New York about 1933.

In 1934 Chrysler brought out the prophetic "airflow" auto. American designers began to find a characteristic expression for full-fledged mass production. This was called "streamlining." Sometimes discreetly used, as in the 1937 Bell telephone by Henry Dreyfus, streamlining more often covered anything from a locomotive to a household appliance with a swelling, speedy-looking, bright-striped shell. This was a symbolic style, like the Empire style, and as remote from the origins of its symbols. With it came planned obsolescence, a natural concomitant of America's traditional and increasing plenty. Products were made to be replaced rather than repaired, and design was employed to express this forcefully. No design features have aroused more contention than streamlining and planned

obsolescence, but, variously transformed, both have maintained their importance in industry in the United States.

In the late 1930s, streamlining and planned obsolescence were strongly attacked from two sides. First, by the teachings of four brilliant expatriates from the German Bauhaus (Gropius, Breuer, Moholy-Nagy, Mies van der Rohe: qq.v.) who went to Harvard and Chicago in 1937 and 1938. In 1938 the Museum of Modern Art published and exhibited the work of the Bauhaus. Then it presented designs by Finland's Aalto (q.v.), heralding the second line of attack. Scandinavian design swept the country, thanks to expert displays from those lands at the 1939 world's fairs in both New York and San Francisco. (In the 1950s Scandinavian design again delighted American consumers.) The artistic clarity and refinement of both these foreign schools of design lent weight to their practitioners and appreciators when these attacked United States design, largely from such ethical positions as those of Emerson, Greenough, and Wright. American designers for industry absorbed some of the new esthetic sophistication, but were puzzled to relate the ethical ideals to the realities of their careers. Norman Bel Geddes' "Futurama" for General Motors at the New York fair predicted a world even further removed from that of the 1850s when those ideals were formed. "World-of-tomorrow" design became stock during the American war years and has been used regularly to introduce changes, which continue numerous and ingenious, in autos and home appliances particularly.

From 1938 to 1955, the Museum of Modern Art conducted annual surveys of good design available to United States consumers. After World War II, many museums across the country actively featured modern design. Charles Eames and Eero Saarinen, today internationally famous for industrially produced furniture (PL. 135), were premiated in 1941 by the Museum of Modern Art, and Eames's work was featured there again in 1946 and 1950. Other prominent representatives of later American industrial design are Arthur Bercow, Walter Landor, Richard Latham, Paul McCobb, and George Nelson; their works achieved considerable refinement without abandoning the realistic bases of their profession. Many business leaders in the United States have supported professional design, for example, Walter Paepke, who initiated annual design conferences at Aspen, Colo., and Arthur Houghton, who has campaigned vigorously for the designer's place in top management. In 1954, *Industrial Design* magazine was launched in New York, lucidly recording men, materials, methods, and ideas. As American design expanded at mid-century, it edged closer to advertising, on the one hand, and on the other, to prefabricated shelter.

The American Designers' Institute, later the Industrial Designers' Institute, was begun in 1938, with John Vassos as first president. In 1944, with professional status and responsibilities in mind, some of the strongest designers founded the Society of Industrial Designers, later the American Society of Industrial Designers; Walter Dorwin Teague was first president. Important schools are: Illinois Institute of Technology, Chicago (successor to Moholy-Nagy's New Bauhaus); Pratt Institute, Brooklyn, its curriculum shaped by Alexander Kostellow; and, oldest, the Art Center School, Los Angeles. In 1948 the National Association of Schools of Design was founded, and in 1957, the Industrial Designers' Educational Association. In the 1950s the United States government used American design to represent the country abroad by sending designers to counsel new or reviving industries throughout the world, and United States design exhibitions to foreign trade fairs and cultural centers. In 1957 an American designer of note, Peter Müller-Munk, was chosen first head of the International Council of Societies of Industrial Design.

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II. ART OF CANADA. The figure of speech most often used to describe the process of the parallel development of art in various countries of the West is that of a river with its sources, main stream, branches, backwaters, and the rest. But when one surveys Western art as a whole over several centuries, it appears that the truer analogy is perhaps that of a lake and its bays. (There is in Ontario a Lake of Bays, which is made up of bays of different sizes and shapes, each with its own particular depth, currents, and geological formation.) Canadian art is one of the smaller bays of Western art, with its own characteristic features deriving from the environment and history of Canada. Its distinctness is due also to various blends of the basic traits in the Canadian artistic make-up — simplicity (a heritage from colonial days), naturalism and romanticism (from England), decoration (from France), and expressionism (probably from northern Europe generally).

The history of Canadian art begins after the colonization of the country by the French in the 17th century, for there was no prehistoric aboriginal art of great importance. The pattern of development over the ensuing 350 years has much in common with that of other American countries. There is a colonial period, during which various interesting local traits appear without basically altering the character of an art transplanted from Europe. This is followed by several preliminary waves of nationalism, which in their turn are counteracted by waves of outside influence. All this takes place before the beginning of the 20th century, in which signs of cultural maturity appear as concomitants of national economic and political independence. The maturing of Canadian art in the past 25 years, which has corresponded in date with the final achievement of political identity after the Statute of Westminster in 1931, has been surprisingly rapid. This has been due not only to the artists but also to a growing interest and support on the part of the public. Finally, the recent development of art in Canada differs considerably from that in most other countries because of the lack of a single great metropolis and the existence of a number of regional centers favoring the development of diverse schools.

The French colonial period (1608-1760). Though Quebec was founded in 1608, it was not until about 1660 that any significant number of French settlers arrived in Canada. When they did, the arts were not far behind. The first bishop of Quebec, Laval, in 1668 established a school of arts and crafts which trained sculptors and painters as well as carpenters, joiners, and masons.

Some of the pupils of this school founded ateliers of wood sculpture in Quebec (the Levasseur and Baillairgé families) and Montreal (the Labrosse family; PL. 138) whose work extended throughout the 18th century and into the 19th. In style the sculptors reflected the successive phases of the rococo in France; but their use of wood, combined with their extreme isolation and the presence of a sturdy folk-art tradition in their midst, gave their work a simplicity and wiry strength seldom found in France. These versatile masters carved everything

from small statuettes up to the decoration of entire church interiors. The nuns in New France practiced carving, painting, and especially church embroidery — the one art in which European standards were rivaled in the early period. In architecture the most interesting local developments appeared in rural cottages and churches with their steep roofs and gaily uptilted eaves, features probably developed in response to the challenge of the flatness of the St. Lawrence plain.

Painting was but a minor art in New France. It was established by a French painter, Frère Luc (Claude François, 1615-85), who visited Quebec in 1670-71; but soon afterward, in the absence of trained painters, it was relegated to the folk artists. Paintings of religious subjects were usually copies from European works, and the more interesting features appeared in the simple, animated folk portraits. Best of all were the votive pictures, which were usually commissioned as thank offerings by survivors of shipwreck: in them the unknown painter had a chance to interpret the people of his time and the local scenery. Only one painter is known to have studied in France, Paul Beaucourt (1740-94), known for his *Negro Slave* (1786, McCord Mus., Montreal), with its reminiscences of Fragonard.

The English colonial period (1749-1867). After the establishment of an English colony in Nova Scotia in 1749 and the conquest of New France in 1759-60, English styles began to affect the arts in Canada. In the Maritime Provinces 18th-century architecture resembled the colonial Georgian of New England. About 1800, however, the introduction of the British Georgian style counteracted the American influence to some degree. In rural Upper Canada (now Ontario) the American classic revival affected the design of houses and churches. In Lower Canada (now Quebec) English forms of architecture were combined in a charming way with French (PL. 137). This unique combination of French and English is also characteristic of Quebec silver, particularly the works of the two leading silversmiths, François Rannozyé (1739-1819) and Laurent Amyot (1764-1939).

The all-important Canadian type of painting — landscape — was introduced by sojourning English topographical artists, of whom the most individual was Thomas Davies (ca. 1737-1812). They painted the scenery of Canada mostly in water color and handed down their practice of making long sketching trips to such early resident painters of pictorial nature as Paul Kane (1810-71), who painted among the western Indians, and Cornelius Krieghoff (1815-72), who painted *habitant* and Indian life in Quebec. Portrait painting in French Canada was an effectively simple version of French classicism (Antoine Plamondon, 1802-95; Théophile Hamel, 1817-70); in English Canada it reflected English and American painters such as Zoffany (Wilhelm Berczy, 1748-1813) and Gilbert Stuart (Robert Field, ca. 1769-1819).

About 1850 there occurred in Canada a significant development of Gothic revival architecture (Parliament buildings, Ottawa, begun in 1859 by Thomas Fuller; PL. 137). Coming when it did, the Gothic revival gave to Canadian towns their basically romantic aspect, as contrasted with the neoclassicism of American cities.

The Confederation period (1867-1900). The years following the Confederation (1867) of the provinces of British North America into a self-governing dominion saw the first outburst of national feeling. This had its echo in the arts. The "fine arts" were recognized as a national activity by the founding of the Royal Canadian Academy in 1880, and professional standards were adopted in painting and sculpture. The painters of the seventies and eighties, despite their European training, treated both sitters (Robert Harris, 1849-1919) and landscape (Allan Edson, 1846-88; L. R. O'Brien, 1832-90; J. A. Fraser, 1838-98) in a highly factual manner. The influence of the Hudson River school in the United States was, however, apparent in the work of some artists, while in architecture the sturdy Richardsonian Romanesque hailing from Boston was used in most buildings of the eighties and nineties.

The early 20th century (1900-13). At the turn of the century the arts in Canada assumed a European sophistication which was both premature and superficial. This showed itself in architecture through the use of pretentious styles: the Beaux-Arts style for office buildings, "collegiate Gothic" for churches and colleges, Roman for railway stations, and the "château style" for railway hotels. Elegance and refinement characterize the work of the best sculptor of the period, Philippe Hébert (1850-1917). The most notable developments took place in painting, which had become the country's principal art. The 20th century began with the painting of "rich" landscape by Horatio Walker (1858-1938), the "Canadian Millet," famous for his elegiac scenes of the Ile d'Orléans, and Homer Watson (1855-1936), whose direct early style was lost when he began to emulate Constable. Except for the unassuming works of Ozias Leduc (1864-1955) and a few other painters, it seemed as if Europeanism would engulf the older tradition of simplicity and directness. The first influences from more recent European painting came with the introduction of impressionism by Aurèle de Foy Suzor-Coté (1869-1937) and, especially, Maurice Cullen (1866-1934), who painted fine atmospheric scenes in Montreal and Quebec. James Wilson Morrice (1864-1925), the friend of Matisse and other Fauvist painters in Paris, introduced into Canadian art the decorative use of color and has had an abiding influence as the pioneer of "pure" painting as opposed to the painting of local scenery (PL. 138).

1913 to the mid-20th century. The years just before World War I were marked by another wave of Canadianism, the reflection of an era of expansion and optimism. This found artistic expression in the work of a group of young painters who came together in Toronto about 1913: A. Y. Jackson (b. 1882), Tom Thomson (1877-1917), Lawren Harris (b. 1885; PL. 138), Arthur Lismer (b. 1885), F. H. Varley (b. 1881; and J. E. H. MacDonald (1873-1932). These used the color of impressionism, the strong patterns of postimpressionism, and the expressionism of the Germans and Scandinavians to create a new style which was based on bold patterns eloquent of the landscape of northern Canada. After the war they banded themselves together into the Group of Seven — MacDonald, Jackson, Harris, Lismer, Varley, Franklin Carmichael (1890-1945), and F. H. Johnston (1888-1949) — and braved the controversies of the twenties until they had established themselves firmly in the national consciousness. Like the 19th-century painters, they made strenuous sketching trips to remote areas of Canada, including the Arctic. Related to them in style were two Montreal painters, Clarence A. Gagnon (1882-1942) and Albert H. Robinson (1881-1956). The British Columbia painter Emily Carr (1871-1945) often employed motifs from west-coast Indian art in her austere but energetic canvases. Quite unlike all the nationalists was David Milne (1882-1953), whose style was quiet and sensitive. He painted mostly in the seclusion of small Ontario towns, endowing ordinary subject matter, which the Group of Seven had scorned, with universal significance. Only John Lyman (b. 1886), a pupil of Matisse, carried on Morrice's tradition of "pure" painting.

The generation following the Group of Seven broke with the unanimity of style and subject matter that had prevailed during the twenties. Some painters still pursued nationalism, but they now sought refinement in their treatment of landscape (Carl Schaefer, b. 1904) and a wider variety of subjects (Charles Comfort, b. 1900, and Will Ogilvie, b. 1901). L. L. FitzGerald (1890-1956) progressed from his early precise paintings of Winnipeg backyards to drawings of still life which combine refinement with classic serenity.

Others have turned away from an approach to art which they consider to be too nationalistic and from a style they regard as too flat and posterlike. These have embraced contemporary international styles, especially that of the school of Paris, chief among them are the painters of the Montreal school, including such "modern classics" as Stanley Cosgrove (b. 1911) and Goodridge Roberts (b. 1904; PL. 138), whose landscapes are nevertheless infused with the character of Canada. There are also the surrealist Alfred Pellán (b. 1906) and the "autom-

atist" Paul-Emile Borduas (b. 1905), both major forces in Canadian art. Remote from Montreal, Jack Humphrey (b. 1901) of Saint John, New Brunswick, began by painting gently cubist landscapes, later turning to portraits, and finally to abstractions. Of the modern nonfigurative painters, Jean-Paul Riopelle (b. 1923) enjoys international fame for his strongly expressive use of *tachisme* (PL. 138). Painters Eleven, a Toronto group, includes William Ronald (b. 1926) and Harold Town (b. 1924), whose "autographic prints" are mysterious and compelling. B. C. Binning (b. 1909) paints decorative abstractions and often collaborates with Vancouver architects in making color designs for architecture. Surrealism is practiced by Jean Dullaie (b. 1916) of Montreal and Kenneth Lochhead (b. 1926) of Regina. Prominent among those who remain faithful to subject matter are Jacques de Tonnancour (b. 1917) of Montreal, whose wiry energy is currently manifested in high-keyed landscapes of northern Canada, and Jean-Paul Lemieux (b. 1904) of Quebec, who employs landscape and figures in a manner keenly evocative of the eastern Canadian environment. Alexander Colville (b. 1920) of New Brunswick uses "magic realism" with similar intent. Jack Nichols (b. 1921) of Toronto is committed to the expression of human emotions, as is seen in a series of lithographs.

Significant sculptors have been few. Elizabeth Wyn Wood (b. 1903) is one of the few who have successfully interpreted landscape in sculpture, using unconventional materials such as aluminum. Anne Kahane (b. 1924), in her carved and painted groups of figures, is both sprightly and architectural in feeling. But the most inventive and versatile sculptor is Louis Archambault (b. 1915) of Montreal, whose abstract-expressionist *Oiseau de fer* excited the public when it was shown in London in 1951; a large ceramic wall by him was an important feature of the Canadian pavilion at the Brussels exhibition of 1958.

In architecture, the great wave of postwar building in Canada has called forth considerable talent in several quarters. The John B. Parkin Associates in Toronto and several groups in Montreal — including Rother, Bland and Trudeau — as well as Green, Blankstein, Russell and Associates in Winnipeg, all reflect contemporary international modes. A serious exploitation of native Canadian materials and forms has been made only in Vancouver (Semmens and Simpson, Sharp and Thomson, Berwick, Pratt; PL. 137).

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R. H. HUBBARD

III. LATIN-AMERICAN ART SINCE THE CONQUEST. The Spaniards who arrived in the Western Hemisphere in the early 16th century and occupied the lands south of the Rio Grande — what are now Mexico and Central and South America — found a group of highly developed American Indian cultures that had evolved independently of the European tradition; in this encounter the Spaniards' experience was far different from that of other colonists, arriving later farther to the north, who came upon much more primitive peoples. After their invasion the Spanish conquerors (*conquistadores*) tried assiduously to destroy most of the evidences of those earlier civilizations. The extent to which the native traditions were firmly rooted and resisted Spanish pressures ultimately determined the character of the new entity that resulted. It is the fusion of European Christian and American pre-Conquest elements that constitutes the culture (including the art) of Latin America. As the Spaniards moved relentlessly forward in their physical and spiritual subjugation of the area, their contact with its inhabitants, including intermarriage and employment of Indian artisans and work-

men, gave the Christian culture of this region the special flavor which it retains even today.

This part of the New World became in all respects a colonial territory, sharply limited in its development by the Spanish Crown on the one hand and the Roman Catholic Church on the other. As early as 1535 the first administrative unit, the Viceroyalty of New Spain, was established, to rule over Mexico and Central America, with Mexico City as its center. A second large unit, comprising the Viceroyalty of Peru, with its center at Lima, was established in 1544 to administer all the Spanish possessions in South America. In the early 18th century the Viceroyalty of New Granada took over the running of Colombia and Venezuela (1717) and, slightly later, of Ecuador. The fourth such unit, the Viceroyalty of Rio de la Plata, made up of Argentina, Bolivia, Paraguay, and Uruguay, was formed in 1776. As for the Brazilian territory, owned by Portugal, this was at first a colony and later a viceroyalty of that country, with special factors determining its development.

In the hands of the various Spanish viceroys rested absolute power over civil and military affairs, while spiritual power resided in the Church. Because Spanish conquest in the New World was motivated not only by gold but also by the cross, it brought a tremendous influx of monastic clergy: Franciscans, Dominicans, Augustinians, Mercedarians, and, somewhat later, Jesuits and Carmelites. These groups undertook to convert the great mass of Indians and often protected them against the depredations and cruelties of the conquistadors. Monasteries were built to carry on missionary activities; and although these were rather modest buildings in the earliest days of mass conversions, in a surprisingly short time ecclesiastical structures of considerable consequence were to be seen. By the early 17th century there were about seventy thousand churches and five hundred monastic establishments of various orders. The Spanish Church itself was an arm of the Crown; its bishops and other officials were Crown appointees, and not even Rome could interfere with the disposal of such positions.

The Church wielded vast authority and influence. Visitors to the Spanish colonies observed, for example, in the early 17th century that Church properties in Lima occupied more of the city than did all the rest. Even in the 19th century, after the colonial era, it was reported by Baron Alexander von Humboldt that in some provinces of Mexico as much as 80 per cent of the usable land was held by the Church.

The visible symbol of this tremendous power is the overwhelmingly widespread church building. Although the Church as a body functioned equally in the various viceroyalties, there is no such thing as a common Latin-American style. The chief centers of colonial administration were usually set up in the destroyed capital cities of the earlier Indian nations, and churches in many cases were built on the actual ruins of earlier temples. The most important colonial cultural centers were in those areas where there had previously been highly developed civilizations. The most significant of these were in Mexico and Guatemala, where Mayas, Aztecs, and Mixtecs had flourished, and in the highlands of Peru, Ecuador, and Bolivia, where the Incas had flourished in the precolonial period. Thus the baroque style of Mexico, for instance, differs from that of Peru; and by the same token one can distinguish between a metropolitan and a nonmetropolitan example in any of these countries; that is, between a church or monastery in Cuzco and one in some small Peruvian town.

Although this colonial art naturally is deeply indebted to Spain in that its patterns were set by Spanish priests and objects of art and its artists were imported from there, Latin-American art of the colonial period remains essentially distinct. Many critics consider colonial baroque of the 17th to 18th century superior to that of the mother country. As we have noted, the new-fledged culture was conditioned by the strength and persistence of indigenous cultural patterns, which began to emerge in Latin-American works as early as the 16th century. Already at that early point — and despite the presence of Spanish artists and builders — local materials, Indian workmanship, and the differing environmental factors had a definite effect on the arts of the Americas. Ultimately American baroque

of the 18th century became so strong in its own right that it crossed the Atlantic to influence the country in which it had had its origin.

The fusion of Spanish and Indian talents produced new and in some ways more interesting artistic types. The Spaniards' efforts to eradicate the pagan religions had encompassed the destruction of all the Maya and Aztec temples and the almost complete obliteration of the great Inca Temple of the Sun at Cuzco, but native workmanship was permitted and even encouraged in the building of the churches. This was first done because it was felt that the use of indigenous techniques and motifs would be a means of spreading the faith. Certainly the priests in charge of erecting such a church as S. Lorenzo at Potosí in the Bolivian highlands were aware that there the Christian symbols were mingled with Inca symbols of the sun and moon and that angels were replaced by sirens playing the *charango*, a native instrument made from an armadillo shell.

This type of free and even non-Christian decorative treatment was paralleled by certain innovations in the architecture itself. The special conditions of mass baptism, necessitated by the conversion of whole populations of Indians, brought forth in Mexico such forms as the immense atriums, or open forecourts, with a shrine at each of the four corners, and the open chapels. On the other hand, fortress churches of the 16th century are found in far greater number in Latin America than was ever the case in Europe during the Middle Ages. Practically all the earliest Mexican churches were of this character, not as a concession to the Indian's taste but rather as a defense against him.

Mexico. Hispano-Indian architecture developed in those areas which had shown the most advanced aspects of precolonial culture and which were also the most densely populated. This is clear in Mexico and Peru. In Colombia no such fusion was possible because the pre-Conquest Indians of that region (the Chibchas) had not reached a high level of artistic skill.

As we have already observed, the most typical Mexican building of the early 16th century was the fortress church, exemplified at Actopan, Acolman (PL. 139), Huejotzingo, and Yecapixtla. These structures date from the time of the Conquest (1519–20) to about the middle of the 16th century, when the tribes in the center of the country were overcome. The buildings show many traces of medieval style, which in the mother country was still being utilized at that late date. Gothic forms may frequently be seen in the ribbed and pointed vaulting of the interior of these Mexican churches, for instance at Huejotzingo and Acolman. It is also noteworthy that often specific characteristics of the late Moorish, or *mudéjar*, style of Spain were transmitted in the decorative work. This is evident not only on the ceilings of the fortress churches of this early period but also in the residences of the conquistadors. As a summing up of the militarism of the Conquest itself and the pious aims of the religious pacification, these churches are a splendid symbol.

Since there was enormous need for building and decorating talent, schools were established by the monks to teach the Indians various techniques. Thus we even find early and somewhat naïve attempts to cover the church walls with paintings, as at Acolman, where, in the absence of fresco prototypes, the natives copied woodcut illustrations from pious books. Many of the so-called "frescoes" therefore came to be in black and white and in a very precise linear style, in some cases actually reproducing in paint the crosshatching of the original woodcut.

Native ideas appeared also in the carvings of these early buildings, not merely in the subject matter but in the flattened and nonsculptural, almost Oriental, manner of the carving itself. This early flattened carving may well be compared with that employed in the precolonial friezes of Chichén Itzá and other sites in the Yucatán peninsula.

a. *The plateresque style.* A second and later stage of colonial development may be called Renaissance since it corresponds to the Renaissance in Spain. It arose from a period of relative calm in the New World when the conqueror was able to turn

from fighting to agriculture and mining. This period, from the middle of the 16th through the first quarter of the 17th century, gave rise to what is known in architecture as the "plateresque" style, a name derived from the fineness and richness of its ornamental work, comparable to products of the silversmith (Sp. *platero*). The open chapel of the monastery of Tlalmanalco shows a combination of Renaissance ornamental detail and Indian craftsmanship (i.e., friezelike flattening) which yields the Mexican version of the plateresque style. The great staircase of the monastery of Actopan shows the increasing influence of the Renaissance in Mexico.

This Renaissance period in architecture was later matched in painting by the mid-17th-century arrival of professional painters from Europe, men in the Italo-Flemish tradition; their influence, however, soon gave way to a more distinctly Spanish viewpoint, that of Zurbarán, Murillo, and others. Many monasteries at this later date continued to be done in Renaissance style, but the simplicity of the earlier medieval buildings was lacking. Luxury and elaboration of decoration became increasingly evident in the church furniture of the time.

Sculpture of the 16th century had still been entirely under the influence of the Andalusian, or southern Spanish, school. By the end of that century there appeared Renaissance retables, or altarpieces, covering the entire end of the church. In their elaborate combination of paintings, reliefs, and free-standing figures, they contrast strongly with the simplicity of the buildings. As in the mother country, these plateresque altarpieces were decorated with saints carved in wood, sometimes covered with gold leaf and generally polychromed, such as the altarpiece of Huejotzingo.

Like sculpture, the minor arts showed strong influences from the mother country, in this case following the Moorish tradition of Spain. Wealthy people brought in many decorative objects from abroad, and the native craftsmen with their centuries-old mastery of fine work in gold produced numerous pieces in that medium. In addition, fine furniture, wrought iron, and embroidery were plentiful. An interesting evidence of the persistence of Indian craft traditions may be found in the reappearance of the famous precolonial feather mosaics, containing religious narratives and representations of saints.

As the 17th century moved forward, social stability and wealth grew, and imposing mansions were built. More and more important ecclesiastics arrived from Spain, and cathedrals were constructed, in addition to the monasteries. This had already been happening during the plateresque period but became more apparent as the next developmental step was reached.

The first generation of Italo-Flemish painters working in Mexico had produced followers; to these were added painters from Spain who were followers of the emotive tradition that had been popularized by the Spanish emulators of the Caravaggio style. Prosperity meant a great expansion of artistic activity, as the greater number of paintings clearly indicates. Instead of the frescoes formerly made for the 16th-century monasteries, we now find huge oil paintings covering the walls of religious buildings; they were done by such artists as Baltaasar de Echave Ibáñez (1583-1640; PL. 144).

The plateresque style in architecture was followed by a brief period in the Herreran manner, a reserved and even dry mode best exemplified in Spain by that coldest of buildings, the Escorial, built by Herrera for the tomb of Philip II. Too severe for Mexico, it was a short-lived fashion there. Nevertheless it did manage to produce a number of interesting examples, such as the Cathedral of Puebla (1649-64) with its controlled exterior, on which, however, some baroque elements already emerge (PL. II, 163).

b. Mexican baroque. Although the earlier architectural forms never disappeared entirely, the whole conception of building veered in the latter part of the 17th century toward an art filled with dynamism and movement. As in European baroque, the surfaces were deeply cut; light and shade contributed to a restless emotive movement throughout these now richly surfaced and deep structures. As a consequence of the fact that there was greater wealth available to the colonists, particularly

gold and cheap labor, the religious and other buildings took on a sumptuousness and elaboration never seen before. By the end of the 17th century Mexican baroque became an identifiable style and an outstanding feature of the Mexican scene, to such an extent that whole cities sometimes appear to be baroque in flavor.

The churches in this style constitute a fairly uniform type throughout Latin America: they are spacious structures, cruciform in plan, with a dome over the crossing, and more often than not with towers dominating the façade. On the façade are deep, shadowy carvings that impart an intense emotional quality to the building. In the interior, rich decorations in the form of retables and other church furniture to this day lend an air of splendid elaboration to the worship conducted there. The palaces of the baroque style also take on some of these features. The Cathedral of Puebla, as was said above, although it shows the transition to baroque, is still rather severe; the Cathedral of Oaxaca with its highly carved façade, its niches filled with statues, and its irregularity of surface and line has an altogether different character, the American variant of European baroque (PL. 139).

Both Puebla and Oaxaca as cities have a marked flavor of the past. The former is distinguished by its almost completely colonial quality, imparted particularly by the tile-covered domes of its churches; the latter is an example of a city which, in spite of its manifestly Christian stamp, is close in many ways to its Indian ancestry. The tilework so plentiful in Puebla (and on the dome, towers, and roof of the Cathedral of Oaxaca) is part of the Moorish heritage of Talavera were brought over by the Spaniards and grafted onto techniques already known to the Indians. Thus the tile-covered domes have become distinguishing features of Mexican churches. Tilework serves secular purposes as well, being used for fountains, wall facings, and city squares (*socalos*).

Sculpture and the decorative arts during the baroque period in Mexico partook of the generally more emotive character of the time — rich, splendid, and dramatically effective. Sculpture, of course, was eminently suited to the movement of surface desired by the baroque artist, but furniture too (both ecclesiastical and secular) shows the same love of movement, the same restlessness of the style as a whole.

c. The Churrigueresque style. At the point where the art of the Mexican area of the Viceroyalty of New Spain assumed its own character, a change occurred in the direction of a distinctive and more elaborate version of the baroque known as the "Churrigueresque" style (q.v.). Whereas the favorite baroque supporting element had been the spiral column, the Churrigueresque style used a kind of pier in the shape of an inverted obelisk covered with heavy ornaments. More important, while baroque buildings such as the Cathedral of Oaxaca had preserved the basic traditional values in plan and in spatial qualities, the new Churrigueresque structures tended toward designs in which movement and rhythm rather than structural discipline were stressed. The buildings and their retables leaned toward the fantastic, expressing an almost dreamlike splendor. The 18th-century monastery of Tepozotlán is one of the most luxurious and colorful examples of this ultrabaroque style and its expression of religious enthusiasm; it points up, too, the limitless supply of gold and the use of the traditionally skillful and decoratively inclined Indian sculptors. Another instance is the sanctuary of Our Lady of Ocotlán at Tlaxcala (ca. 1745; PL. 140).

This last flowering of colonial genius gave way toward the end of the 18th century to the neoclassic influences coming again from Spain. Both architecture and sculpture display the evidence of that increasingly powerful strain. An architectural example is the Church of the Carmen (1804) at Celaya, Guanajuato, designed by Francisco Eduardo Tresguerras (1759-1833). In sculpture the works of the Spaniard Manuel Tolsa (1757-1816), such as the equestrian monument of Charles IV (1803) in Mexico City, exemplify this trend; Tolsa, who was also an architect, was the director of the Academy of S. Carlos in Mexico City. The entire hemisphere, north and south, was affected by the neoclassical development.

In painting, the baroque had produced such artists as Baltasar de Echave Ibañeta; but the Churrigueresque period marked a serious decline in the painting of Latin America. The fantastically elaborate and gilded retables with their polychromed and otherwise decorated figures were in themselves pictorial in viewpoint rather than sculptural. In some ways they seemed even to fulfill the illusionistic needs of the art of painting, with their naturalistic treatment of skin, of actual draperies, and of other adjuncts. Such elaborate carving left no flat surfaces on which paintings could be done or to which they could be attached, as had been possible with baroque altarpieces.

Curiously enough, the great demand for paintings throughout the increasingly wealthy colonies brought a serious drop in quality. Pictures were turned out wholesale. The outward forms of the art of Murillo (a genuine phase of baroque expression in Spain and in the colonies) became pat and empty formulas which were widely used and little understood. Up to this point the skilled Indian craftsmen with their architectural, sculptural, and craft-arts experience had been able to make significant contributions, but the superficial naturalistic narrative demanded by 18th-century religious painting left them out completely. With the exception of the work of such portrait painters as Miguel Cabrera (1695-1768) — for example his portrait (1750) of Sor Juana Inés de la Cruz, the great religious poetess — and an occasional still-life painter such as Antonio Pérez de Aguilar, the bulk of the painting produced in the second half of the 18th century, mostly religious art, is of very dubious quality.

The highlands of South America. While the fusion of Spanish and native genius may be traced in many Mexican examples, it is in the art of the South American highlands during the 18th century that we find the most significantly Indian renditions of this combination of talents. It may be said that here the Indian resistance to Spanish concepts was far stronger than in Mexico and that proportionately more native elements remained in the South American arts.

On the shores of Lake Titicaca, the Sacred Lake of the Incas, at an altitude of 12,000 ft., we find such old cities as Zepita, Puno, and Pomata whose churches are almost un-Spanish in character, so heavy is the proportion of Indian details. This influence spreads from its center at the lake into many areas: to Potosí in Bolivia, for instance, where the church of S. Lorenzo, as we observed earlier, shows a façade (1728-44) replete with Indian motifs (PL. II, 163). Moving north, this influence is felt, though less, as far as Quito, in Ecuador. In Peru, as we shall see, the capital at Lima remains almost completely Spanish; but Cuzco, built on the ruins of the earlier Inca civilization, reveals strong traces of that background in its materials and in its generally Cyclopean, or massive, wall structure.

Whether Spanish- or Indian-influenced, the two great centers of Hispanic-American arts, after Mexico, are Quito and Cuzco. When the Mexican conquest had been completed, the Spaniards had pushed south to Peru, where Pizarro overthrew the Inca emperor (1533-34) and planned the new city of Lima for a capital. On the remains of the destroyed Inca capitals, Cuzco and Quito, the conquerors built a pair of Christian cities.

What has been said earlier about the extension of Spanish civil, cultural, and ecclesiastical principles to Mexico also applies to Peru. Apart from the use of Inca and other local motifs by the Indian craftsmen rather than Maya or Aztec, the real difference between the two areas lay in the greater Peruvian resistance to the penetration of Spanish ideas. To some extent it was because that area had been the heart of the great and powerful Inca empire, a major element in pre-colonial culture of the Americas; and it also owed something to the fact that the center around Cuzco was far removed from the Spanish administrative capital at Lima.

For the purposes of this survey, the architecture and art of Lima may be considered to duplicate that of Spain, for the most part. Ships left for the Old World from here with the gold and silver garnered in the New World. The same ships came back with articles of luxury, particularly ecclesiastical furniture, paintings, and sculpture, as well as architects and

sculptors from Spain. This literal transplantation of Spanish art and artists made for a minimum of Indian influence in the Lima center, which in any event had never been an important Indian cultural entity. What we find here, therefore, is a multitude of Moorish architectural elements, *mudéjar* woodwork patterns, tilework of the Seville type, and furniture from the same source (PL. II, 163). A good instance of the kind of building produced is the Palacio de Torre Tagle (1730-35), now a government building.

Turning from Lima to Cuzco, we find that the atmosphere changes. Here, as we have noted, the conquerors built on the ruins of Inca temples, and in some cases preserved the earlier masonry for Christian purposes. However little of the original walls and foundations were employed, there was a strong tradition of stone building that gave a special direction to the church architecture of Peru and the Andean highlands in general. In this region emerged one of the most original styles of Spanish America.

In Cuzco itself the best-known building is the Cathedral, which, like most of the buildings there, postdates the destructive earthquake of 1650. Its simple outlines, squat towers, and heavy masonry illustrate very directly the Inca heritage; a relatively baroque doorway inserted into the whole ameliorates the severity of the façade (PL. 140). The Cathedral was built on the ruins of the temple to the Inca god Wiracocha; the evenly cut brown-colored stones of the temple were reused in its construction. Severe as the building is in shape, and undeveloped though the interior may be by comparison with its contemporaries in Mexico — Andean baroque and postbaroque examples are usually less ornate than are Mexican — it possesses a simplicity and directness that remove it from the more subtle *Herreran* category. Compared with the elegance of the latter style, the Cathedral of Cuzco has an elemental strength, an almost primitive power. Walls like these suggest the massive masonry of the Inca citadel of Sacsahuaman (PLS. 154, 155) in Cuzco or the awesome majesty of Machu Picchu (PLS. 147-151). Within the building we find heavy cruciform piers that help support a system of Gothic brick vaulting. The curious wood ornamentation brings to mind the Indians who worked here, as many as fifty helped to build the façade. Further signs of Indian influence on the Spanish buildings of Peru can be seen in the church of S. Sebastián at Cuzco and that of La Compañía in the city of Arequipa. On these examples the Indian imprint is twofold: in the introduction of plant and animal forms, and in the typical flattening of the carved ornament, which suggests that of the Incas (and of the Moors).

Because of its inland location, far from the sea lanes communicating with the mother country, Cuzco could not be the actual capital of the Viceroyalty of Peru, but it retained its early importance throughout the colonial period. It was a gathering place for the many caravans carrying the mineral wealth of Peru to the port cities on the Pacific. Its main square, the Plaza de Armas, is one of the largest in Latin America and is distinctive in that it has four churches. In addition to architecture, typified by the Cathedral, Cuzco also produced a great variety of church furniture, painting, and metalwork, as well as sculptures to be used for retables and crucifixes.

In the northern portion of the Viceroyalty of Peru, mainly in what today is Bolivia, we again find a strong Indian carry-over. The stonemasons responsible for the chief churches and civil buildings of La Paz and Potosí combined the tendencies of the great Tiahuanaco tradition and that of the Escorial, near Madrid. The austerity of the Cuzco style is felt here even more forcefully, probably because the Tiahuanaco tradition itself was inclined that way. The church of S. Francisco at La Paz and that of S. Lorenzo at Potosí (PL. II, 163) offer a certain simplicity of general form that at first glance is obscured by the rich, flatly carved, Indian type of ornament covering the façades (especially the portals) — ornament filled with Indian motifs of all kinds. Looking beyond these all-over decorations, however, we find definite and carefully balanced horizontal and vertical lines determining the movement of the façades, rather than the complex in-and-out movement frequently found in the more typically baroque monuments of

Mexico. This is an altogether new version of the baroque style.

Another important center in the Spanish colonies was Quito; it was one of the later Inca capitals and perhaps for that reason less tenaciously Indian than an earlier capital like Cuzco. In this more Spanish city many colonial buildings may be found, principally churches and monasteries, such as the Franciscan church of S. Francisco and the Jesuit church of La Compañía (i.e., the Company of Jesus).

One of the most elaborate complexes in Spanish America, S. Francisco takes in an area of four city blocks and has four cloisters with altars and paintings. It was finished in the mid-17th century and has long been one of the showplaces of South America. The façade is long and low, with a slightly Renaissance portal accented by paired baroque columns and rusticated bands of stone that suggest 17th-century European baroque. This central section is capped by two towers and stretches away to left and right in long horizontal wings. The low, massive quality reminds us of other Andean churches, for example the Cathedral of Cuzco. The exterior is in strong contrast to the rich interior, which has *mudéjar* work on the ceiling, gilded wood carving in the lower part of the nave, and a high altar that covers the entire apse and even flows round the corners into adjacent areas, contributing to one of the most impressive and luxurious effects in Latin America.

The Jesuit church of La Compañía is necessarily less diffuse in arrangement than the monastic establishment just described, which has many different functions to perform. In addition to being more homogeneous in form than S. Francisco, which is spread over its enormous area, it is in various ways more genuinely baroque.

In general plan and façade La Compañía suggests a combination of two famous Roman Jesuit churches: Il Gesù, the mother church of the order, and S. Ignazio, which was in the process of building while La Compañía was going up, during the mid-17th century. But when we compare the severity of façade of the two Italian buildings with the lush decorativeness of the Quito building, we see clearly the difference between the academic baroque of Italy and the lively, varied, almost tumultuous baroque of Latin America. The gold in the interior of La Compañía, unlike the pure gold found in some other buildings, is tempered by red and white paint in the carved ornamentation and by the red background of the gilded strapwork. It has been suggested that these gold-sheathed interiors are somehow connected to the gold-sheathed temples of pre-colonial times; certainly a knowledge of the technique must have been passed on from one age to another.

We might mention here that in parallel Spanish colonial centers in Guatemala, S. Domingo, and Colombia local conditions created their own minor variations of the Renaissance, baroque, and ultrabaroque styles. A separate development occurred in the Portuguese territory east of the Andes, constituting present-day Brazil.

Brazil. Settled by the Portuguese, Brazil does not manifest the same succession of styles that characterizes the Spanish-dominated centers. This region, which shows practically no artistic or literary development during the 16th century, was a virtual wilderness when the Portuguese began their campaigns. More serious, the Indians were in no way comparable in cultural achievement with those of the Spanish viceroyalties, especially Peru and Mexico, where groups of trained craftsmen could be drafted. Traditions of building did not exist in the Brazilian area; neither were there developed mines or regular trade with which to pay for building work. Indeed in the northeast of that land even good stone was missing, so that later it had to be imported from Portugal.

Moreover, for various reasons, including Portugal's scarcity of private and public capital, involvements in the Far East, and other factors, her colonies in the Americas were not exploited so vigorously; and by the same token the religious orders were not free to involve themselves there until late in the 16th century. One of the few exceptions was the wealthy region of Olinda Pernambuco, in which homes, churches, and

monasteries were richly decorated; however, these were largely destroyed during the Dutch occupation in the first half of the 17th century. Finally, the Portuguese revolt against Spain in 1640 put a stop to building for a while, both at home and in the colonies. It was not until the end of the 17th century, therefore, that buildings appeared with any degree of frequency in Brazil; the first of these were in the severe late-Herrera style to be seen in the coarsened examples at Recife (Espírito Santo and Madre de Deus) and at Santos and Rio de Janeiro.

Salvador (or Bahia), the first capital of the colony (until 1763), presents a cross section of the various artistic trends. One of its earliest structures, the church of the Third Order of St. Francis (1703), illustrates the Brazilian variety of Portuguese baroque with its typical wrought-iron balconies and the rhythmical use of consoles and volutes, the decorative elements so separated as to give a static rather than a flowing effect.

Another distinct style in Brazil is the so-called "coastal baroque" embodied in the church of S. Pedro dos Clérigos at Recife, the Venice of that part of the world. Its chief characteristics are tall, narrow façades, elaborate French windows (where Spanish American baroque would show niches), an emphasized central doorway, a high pediment separated from the squarish towers, and whitewashed wall surfaces.

Unique in the architecture of the Americas is the type of church associated with the province of Minas Gerais ("general mines"), where a strike of gold and diamonds brought about a great influx of people from elsewhere in Brazil and from Portugal. In this fabulous and for a long time secret activity the government controlled every grain of gold dust and fragment of diamond mined; visitors and travelers were enslaved, and everything was excluded that did not make for the fullest exploitation of the colony. As a by-product of this wealth and activity many handsome, even elegant, churches were built, in a style that has been classified as rococo rather than baroque, that is, light, airy, and graceful rather than florid, emotive, and heavy (PL. II, 163). A local quartz was used, for its structural as well as artistic value, and the availability of large quantities of fine hardwood for beams tended to exclude the arched vaults typical of the other schools of colonial architecture.

These mining-district churches, many of the finest occurring in the area of Ouro Preto ("black gold"), show a simple rectangular plan, a pair of formally round or square towers integrated into the shape of the façade rather than separated, a single doorway equipped with an elaborately carved cornice, handsomely shaped rococo windows directly over the cornice as well as above it at the sides, and window balconies. S. Francisco at Ouro Preto is a fine example of the style; it exhibits all these features as well as a charming contrast in color and texture between the light (gray) hue of the main body of the building and the orange soapstone used for the engaged columns, bases, and cornices.

S. Francisco and other churches in Ouro Preto are associated with the name of the architect-sculptor Antônio Francisco Lisboa (1730-1814; PL. 143), who in later life became ill and disfigured — presumably from leprosy — and was known as "The Little Cripple" (*O Aleijadinho*), under which name he has entered the history of art. It would seem that the carving around the portal of S. Francisco and in the disk above it are due to O Aleijadinho, whose personality appears to have dominated the art of this section of Brazil in the 18th century. In this mode of expression, with its decoratively contrasting façade elements and colors, its gay motifs of garlands and scrolls, its graceful window carvings, and its eloquent sculpture, Brazil produced a style that can be matched only in part by that of Portugal. For an architectural equivalent we must look to the rich 18th-century style of southern Germany; for a sculptural approximation we must go back to the naturalistic emotive sculpture of the late Middle Ages.

The 19th century. With the end of 18th-century colonial styles, the ensuing stream of neoclassicism was destined to exercise its influence throughout the Americas during the major part of the 19th century. The exhausting wars of independence that set in at the beginning of the 19th century cut building

activity down to almost nothing. In architecture the rather uninspired neoclassical mode, with its revived imitation Greek and Roman orders, is exemplified by such public buildings as the Casa de La Moneda in Santiago, Chile, and the Palacio de la Minería in Mexico City. We may consider as parallel the sculpture of Manuel Tola (mentioned above) and the painting of Rafael Ximeno y Planes (1761-1825), a pupil of Anton Raphael Mengs in Spain and decorator of the cupola of the Cathedral of Mexico.

All these examples as well as the revolution against the Spanish monarchy and Church point to a consistent secularization of the arts during the 19th century, with new architectural types and greater emphasis on genre and portraiture in painting and sculpture. The shift from Spanish intellectual leadership did not mean the end of European influence; it meant rather a turning to French "inspiration," that is, to David, Ingres, and even Bouguereau, who were reproduced in colonial fashion, yielding a technically inferior and provincial version of the original. The work of José María Vázquez in Mexico can be taken to represent this phase.

For Church domination in the arts there was substituted that of the various official academies. These in their turn were under the domination of the French Academy. The tenacious grip of the neoclassical style meant a slow and reluctant adoption — in fact, only a barely perceptible awareness — of the great revolutionary innovations in the art of 19th-century Europe.

Although no great art movements (in either the European or the North American sense) emerged from 19th-century Latin America, there were a number of trends and of individual masters that should be noted. First we have the already mentioned formal academic production designed to please the conservative elements in the various countries. This consisted of portraits, battle pictures, and genre, or everyday, scenes. Then we find a group of painters interested in the different aspects of regional and even native culture. As a secondary offshoot of an earlier European romanticism, this interest in the faraway, the exotic, the moving and inspirational, produced relatively little of real significance, though some of its results are most interesting from a documentary point of view. The native arts and crafts, which had their roots in the precolonial past, continued to function on a high level during this century and were ultimately to furnish one of the catalysts for the revival of the arts in the early 20th century.

The portraitists as a group stem from the so-called "Goya movement" in Mexico that postulated the superiority and usefulness of Goya's formulas, which were practiced in almost all the Latin-American centers and combined with those of the stiffer followers of Ingres and David. Among the best examples of this style are the works of Antonio Salas of Ecuador, portrayer of many liberators of the Colombian area, and José Gil de Castro of Peru, a typical renderer of the stiff Empire type of portrait. Prilidiano Pueyrredon (1823-70) of Argentina is one of the better portraitists of the century as well as a significant practitioner of genre subjects, which he seems to have executed with considerable feeling and understanding.

Besides these few, there were many other portraitists who flourished with the economic development of their respective countries and in response to the need for glorifying revolutionary heroes. There were also painters of battles, who emerged as part of the new nationalistic fervor of the period; here and there important figures appear among them, such as Juan Manuel Blanes (1830-1901) of Uruguay. But by and large nothing is more tedious than an inspection of 19th-century battle painting, even in Mexico, which in art still stood far ahead of the other Spanish American countries.

The nativist, or Indianist, school (related to the romantic movement) is one of the commonest aspects of 19th-century Latin-American culture. But it expresses itself in an artificial and unbelievable manner, with *salon* Indians stalking through a cultivated and perfumed jungle or floating on mirror-limpid streams. Rodolfo Amédéo of Brazil and Ignacio Merino (1817-76) and others of Peru thus depicted the Incas, while Mexican painters managed to reduce the Aztecs to a similar banality. There is a consistent academicism of technique that charac-

terizes each generation of artists. In addition, because they had no genuine idea of the dignity and intrinsic character of the Indian, they ended with a romantic-academic travesty. It would remain for artists of the 20th century to succeed in this field of interest.

Nineteenth-century landscape painting of the Latin-American countries had an inspiration similar to that of the United States in the nationalism that directed attention to the beauties of the surrounding scenery rather than to fictional landscapes of Greece and Rome. Further, the desire to explore and to project themselves into the vast beauties of a large country like Mexico or Brazil (or the United States) stimulated artists in this direction. Perhaps the outstanding figure of the century is the Mexican José María Velasco (1840-1912), whose vistas of the Valley of Mexico suggest the broad compositions of Inness rather than the minutiae of the Hudson River school, to which his work is often compared (PL. 144).

The folk arts of the period (which have continued to the present day on a high productive level) include both the "primitive" *retablos* (PL. 144), a direct and spontaneous expression of thanks to God and the saints for favors received, and the various objects made for everyday use. The first category presents a type of art that may well be compared to that of North American primitive painters of the same period, unlearned artists such as Edward Hicks; but the Spanish-American examples show a more lurid juxtaposition of colors, especially in the rapidly executed works put on store fronts and on the façades of saloons — the latter known as "*pulquería* paintings." All these have a vivid quality that suggests the indigenous precolonial tradition of dramatic color and linearism rather than the European three-dimensional approach; they represent a genuine folk expression.

The craft arts, still flourishing today in diverse parts of the Spanish American world, are far more varied in technique and expression, since they represent so many more needs. Thus pottery, lacquer ware, and textiles (outstanding in Mexico) are supplemented in numerous countries by basketwork, silver, leatherwork, masks, papier-mâché figures used at festivals, and so forth. Although they stem from centuries-old native traditions, these crafts have assimilated a number of Spanish procedures and patterns. Certain forms of ceramics — for example, tilework — are strongly influenced, whereas the everyday pottery retains its basic native quality. Similarly, the toys made of wood or clay, among the most charming objects to be seen anywhere, have little to do with the Old World, as is also the case with the humorous and grotesque papier-mâché Judas figures and masks.

The 20th century. Just as the early 19th century in Latin America was marked by revolutions against Spain, so the early 20th century was characterized by revolt against the backwardness of existing social conditions — political, economic, and cultural. Nowhere was this so manifest and so vital as in Mexico, where both the long-entrenched dictatorship of Porfirio Díaz and the artistic rule of the academicians were swept away in the fires of the 1910 Revolution.

As in contemporary Europe young artists — cubists, expressionists, and others — were discovering the form-giving vitality of primitive art, so in Mexico, and later elsewhere in Latin America, artists were turning to their native traditions. The connecting link with the past had been the craft and folk arts (see above), in which the bold colors and stylizations of precolonial art persisted, so to speak, just beneath the surface.

Basing their art on the monumentality of precolonial examples, the special qualities of the Mexican scene, and the animating ideals of their Revolution, a whole generation of Mexican artists — many of whom are still at work — produced one of the most exciting artistic phenomena of the 20th century. The Mexican development is primarily a mural and graphic-arts movement, in keeping with its didactic aims and ideals, its desire to spread political inspiration and popular education. Easel painting does exist, but for the most part it has been secondary. The Mexican school, moreover, has been semi-official, since the government has provided walls for the murals

and payment, however modest, to the artists; but it departs from the conventional notion of a government-sponsored art because this government has ruled Mexico in the name of the Revolution.

The mural program began in the early twenties, immediately involving the leading artists, when walls were assigned in the National Preparatory School to a team of painters led by Diego Rivera (q.v.) and including David Alfaro Siqueiros (q.v.), while José Clemente Orozco (q.v.) worked independently. In 1922 Mexican painters organized themselves into the Syndicate of Technical Workers, Painters, and Sculptors, a trade union to represent them in their dealings with the government. The first decade of Mexican painting may be evaluated by contrasting the charming Children's Library decorations of Carlos Mérida (b. 1893), a Guatemalan member of the group, with those of Rivera in the National Preparatory School and the Secretariat of Public Education, and with those of Orozco in the Preparatory School.

The sophisticated primitivism of Mérida, who had worked in Paris with Modigliani and Picasso, provides an inkling of the European relationships of this movement. Rivera's art represents a postimpressionist rendering of the events in Mexican history, past and present, in large, bold color areas and with crowds of little peasant figures that evoke the early Renaissance painting of the 14th century. Decoratively he is undoubtedly most effective, although his insistent didactic approach on a political level tends to make for a certain sameness of effect. His most important murals include, in addition to the ones in the two sites mentioned, those in the Agricultural School at Chapingo (1926-27; PL. 145); later murals were executed elsewhere in Mexico as well as in the United States.

Orozco, acknowledged as the leading master of the Mexican school, presents a more emotive, even expressionist viewpoint, and projects broad humanitarian concepts without involvement in any political ideology. He was a philosopher who painted to express his anger at injustice and his sympathy with suffering. In addition to the Preparatory School murals, done in 1923-24 and 1926, he carried out other extensive mural projects in Mexico City, and some in Guadalajara and the United States (PL. 145).

Siqueiros, the third of Mexico's trinity of social muralists, developed relatively late, but it was he who introduced the important concepts of "dynamic realism" and "public art." In the first he sets the realistic figure in motion with illusionistic devices; in the second he proposes that all mural art be outdoors and thus genuinely public. After completing his initial work at the National Preparatory School, he spent a dozen years as a labor organizer. Like the other painters, he visited the United States; he organized a workshop for the development of modern painting materials in New York (1936) and executed a mural in Los Angeles. Other important murals in his neorealistic technique include the ones at the Electrical Workers Union in Mexico City (1939), the masterly work at the Escuela México in Chillán, Chile (1942; PL. 145), and those in Mexico City's Palacio de Bellas Artes (1945), University City (1952-55), Polytechnical Institute (1952), and Social Security Hospital (1953).

As was remarked earlier, the easel painting movement in Mexico is slight in comparison with the mural work. The outstanding easel painter is Rufino Tamayo (q.v.), who has been influenced both by precolonial sculpture and by school of Paris painting, notably that of Braque and Picasso. His art, richly colored and strongly Mexican in spirit, is internationally known (PL. 146).

Outstanding painters in the other Latin-American countries have been easel painters rather than muralists, and there are a number of fairly important ones. Their contribution can be divided into two portions: works done between about 1925 and 1945 and those that postdate World War II. In the first category we find an art still suffering from 19th-century academicism, including a kind of impressionist academicism that has infected a great deal of the so-called "modern" painting in Latin America. On the other hand, in certain countries, principally Brazil, Argentina, and Cuba, there is real awareness

of the most modern abstract tendencies, up to and including those of the period since 1945. In between these two extremes are a great many groups and individuals who have been affected by the various school of Paris movements and by German expressionism. In general, these diversified modern influences are to be found in South American areas; Mexico, with few exceptions, has continued its representational and didactic revolutionary approach to art.

European influences on South American art came about in the normal course of art students' travel abroad. During the 1930s it also operated through the arrival of refugees from the countries affected by the onslaught of Hitlerism.

Postimpressionist influence may be seen in the intimist paintings of the Uruguayan Pedro Figari (1861-1938). Like the Brazilian painter Candido Portinari (b. 1903), he combines the French forms with native picturesque elements in a forceful mixture. Portinari, under the influence of Foujita, projects delicately delineated but powerful Negro figures from his own environment.

Fauvist influences have also been plentiful; for example, Horacio Butler (b. 1897) of Argentina suggests Segonzac, and Carlos Enríques (b. 1900) of Cuba, Vlaminck. Cubism and postcubism appear in the work of such men as the Argentine Alfredo Guido (b. 1892), a pupil of Lhote bringing the message of facet cubism. His countryman Emilio Pettoruti (b. 1895) was first a follower of the futurists and then of synthetic cubism. Other cubist-influenced artists have been the Cubans Amelia Pelaez (b. 1897), Wilfredo Lam (b. 1902), and Mario Carreño (b. 1913), the last-named showing an interesting blend of native themes and cubist mannerisms. Lasar Segall (b. 1890) of Brazil represents the expressionist side of modern art as developed in Germany.

Besides the ones mentioned, other conventional modernist techniques, including the neoclassicism of the 1920s and magic realism, appear throughout the hemisphere, as does a genuine and moving type of primitive art, the latter particularly in Haiti. The votive paintings, or *retablos*, noted during the 19th-century development are also found in all countries.

The Mexican school of the period between the 1920s and the 1940s has had a widespread influence in several countries in South America—Peru, Chile, Venezuela, Colombia, and Ecuador. Oswaldo Guayasamín (b. 1916) and Eduardo Kingman (b. 1911) of Ecuador and the influential José Sabogal (b. 1888) of Peru (spearhead of the nativist school in that country) exemplify this trend in Latin America.

Side by side with the nativist painters and those practicing the many varieties of pre-1945 modernism, we find a new group of painters stemming for the most part from São Paulo, Brazil, and Havana, Cuba. These show a keen awareness of the *tachiste* and abstract-expressionist trends of the period since World War II. Many of the earlier nativists and modernist-nativists like Mario Carreño reappear now as abstract-expressionists. By the same token, there are many new talents who have little or nothing to do with earlier nativism but spring from close affiliation with the leading trends of Europe, for example the abstract-surrealist Roberto Matta Echaurren (b. 1911) of Chile, who turned from a period of architecture with Le Corbusier in Paris to a distinguished career as a painter in both South and North America (PL. 140). In most recent years a considerable number of young men and women have emerged in Brazil, Cuba, and other places, representing a later generation and bringing Latin-American art in those centers abreast of art in New York and Paris. A characteristic instance would be the abstract-surrealist work of Raul Martínez (b. 1927) of Cuba, whose sparkling nonobjective colorism and movement are a measure of the distance the art of Latin America has come since colonial times.

The break with 19th-century academicism in painting and sculpture was followed by a similar modern trend in architecture. But where the assimilation of various aspects of modernism in the other arts was relatively painless (if limited), in architecture the shift has not been so easy to effect nor always so successful in its results. One of the difficulties has been the strangle hold of the official French academic style in most

of the Latin-American countries. Another has been the influence — not always beneficent — that has come from the United States, manifesting itself in an unfortunate resemblance between certain Latin-American cities and some of its Middle Western cities.

To the first of these circumstances can be attributed the extremely slow emergence of Latin America from the doldrums of Beaux-Arts architecture. Although there have been a number of outstanding practitioners of traditional architecture, it was with the greatest difficulty that such men as Lúcio Costa (b. 1902) of Brazil, Carlos Villanueva (b. 1900) of Venezuela, José Villagrán García (b. 1901) of Mexico, and Sergio Larrain García (b. 1905) of Chile during the past generation succeeded in overcoming this handicap. In Brazil the change was coming about as late as 1935; in some countries it was only beginning about 1950.

Certain building problems are common to a number of the Latin-American countries. Their relatively warm climate, though not necessarily tropical, produces problems of heat and glare that their architects have had to solve. More important, the relatively slow industrialization of these countries has meant a lack of such basic modern materials as structural steel and aluminum, which they cannot always afford — and do not always wish — to import from other countries. Although many Latin-American nations possess a substantial amount of fine woods for carving and for cabinet purposes, there is a serious shortage of structural timber. Building stone is also in short supply, nor are there very many, or very good, materials (such as marble) for facing buildings.

In the past century or so some of these shortages have been overcome by the use of stucco treated in a wide variety of ways; more recently the most widely used structural material has been reinforced concrete (ferroconcrete). Similarly, the shortage of surfacing material has been overcome by the application of different kinds of mosaic, both glass and tile types, sometimes over very large surfaces, as in the decorations on the Library of the University City in Mexico (PL. 141) by Juan O'Gorman (b. 1905). Another example is the brilliant decorations by Oscar Niemeyer (q.v.) on the Church of St. Francis in Pampulha, Brazil. Although some may question the use of this form of decoration to cover such large areas, the fact remains that sun glare is ameliorated to a considerable extent by any allover color decoration. Another device employed to this end is the application of new synthetic paints that are impermeable to rain. The Rectory of the University City and the Polytechnical Institute are two of the many Mexican buildings on which these paints have been used.

In order to avoid heat (and glare) Brazilian architects have developed a type of louver, or movable shutter, that can be controlled individually to suit individual needs. This is well exemplified in the Ministry of Education and Public Health Building (1937-42) in Rio de Janeiro (PL. 142) by Lúcio Costa and his associates, with Le Corbusier as consultant.

The value that ferroconcrete has had in Brazilian architecture through the flexibility it offers in the making of shell vault forms is well illustrated in the churches of Oscar Niemeyer, for example, the Church of St. Francis at Pampulha. It is by this means that Latin-American architects in general — for instance the Mexican Enrique de la Mora (b. 1907) in his Monterrey church of La Purísima — have overcome the shortages mentioned. They have in this way been impelled toward what has become almost a signature of the Latin-American architect — the use of the most elaborate and spectacular curved forms.

While the countries of Latin America have largely emancipated themselves from traditional architecture, in some areas, notably Mexico, there is a tendency to turn to the native tradition for inspiration. The new University of Mexico (University City) in its adaptation of precolonial forms, especially in the ball courts, or *frontones*, gives further evidence of the nationalism already noted in connection with the representational arts. On the other hand, the auditorium of the Normal School (1946) by Mario Pani (b. 1911) and the earlier efforts of Juan O'Gorman in private residences represent sincere and successful attempts to come abreast of the modern trend.

It is in Brazil, however, that Latin-American architecture has had its greatest flowering. From the great project for the Ministry of Education and Public Health led by Lúcio Costa (and later including Oscar Niemeyer, who had an important role in forming its final character) down to the most recent efforts, a spectacular art form has consistently been projected. A later undertaking is the Brazilian University City begun under the direction of Le Corbusier and carried forward by Niemeyer, Costa, and Affonso Reidy (b. 1909).

This architectural accommodation to the newer needs and styles of the 20th century has occurred throughout Latin America. In addition to the individuals and countries already mentioned as participating in the modern movement one may point to such figures as Julio Vilamajo in Uruguay, Mario Biano and Calvo Augusto in Peru, Gabriel Serrano in Colombia, and Jorge Kolnay in Argentina as typical of the wide body of practitioners in each of their respective countries. By the same token in certain countries in Central America (e.g., Panama and Guatemala) and the Caribbean (Cuba and Puerto Rico), where both geography and economics tend to bring them into close touch with United States viewpoints, there has also been a lively and interesting development in contemporary architecture.

For the visitor returning to the countries of Central and South America after an absence of fifteen or twenty years, the change in mere physical appearance of the various cities is truly astonishing. Just as the advent of the *conquistadores* at the beginning of our story resulted in the building of thousands of Christian churches and other religious buildings, changing in remarkable fashion the face of what was to become Latin America, so the awakening of the 20th century has wrought its own miracles: city after city has taken on the ultrafunctional, mechanized appearance of the modern urban center — its shapes, its colors, its textures, and, above all, its functions.

Not only in the proliferation of new forms (parabolic vaults, sun-control devices, sharply inward-sloping butterfly roofs) and new materials (ferroconcrete) and the reapplication of old materials (*azulejos*, or colored, glazed tiles) does Latin-American architecture make itself felt as a fresh and vital force in the modern world. It is also outstanding in its overwhelming consciousness of the social needs of the community. Its consistent emphasis on universities, schools, hospitals, and other "service" buildings reveals its concern for the needs of the hitherto neglected majority of Latin-American citizens — its coming of age in the modern world.

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Illustrations: PLS. 74-146; 3 figs. in text.

AMMANATI (AMMANNATI), BARTOLOMMEO. Florentine sculptor and architect (b. Settignano, 1511, d. Florence, 1592). Ammanati trained first with Baccio Bandinelli and then worked with Jacopo Sansovino in Venice, but like most Tuscan artists of his generation he was primarily influenced by the forceful example of Michelangelo. Ammanati's long life encompassed activity in Pisa, Padua, Venice, Rome, and other cities, as well as Florence. His patrons included the learned jurist Benavides in Padua, Pope Julius III, and the Archduke Cosimo I of Tuscany.

After years of work in central and northern Italy, of which the earliest surviving example is the Benavides tomb in the

Church of the Eremitani at Padua (1546), in 1550 Ammanati moved to Rome. Introduced to the papal court by Vasari, Ammanati was commissioned to work with Vignola and Vasari on the elaborate papal Villa Giulia (1552) and to execute the Del Monte tombs in S. Pietro in Montorio (1553). Sometime after the death of Julius III in 1555, Ammanati returned to Florence and undertook various projects for Cosimo I, including an extension of the Pitti Palace and a large fountain for the Palazzo Vecchio (partly finished, placed in the Villa Medici at Pratolino, and later dispersed). The climax of Ammanati's career as a sculptor was his victory over Giambologna, Cellini, and others in a competition for the Fountain of Neptune, Piazza della Signoria, Florence, completed in 1575. In addition to his work as an architect of palaces and churches in Florence, Lucca, Rome, and elsewhere, Ammanati designed the superbly wrought Bridge of Sta Trinita (completed 1570, destroyed 1944, rebuilt 1957). His personal life was enhanced by his marriage in 1550 to the distinguished poetess Laura Battiferri. In his later years he became increasingly preoccupied with the religious crises of his day, and his scruples ultimately led him to renounce his earlier sculpture.

In his art as in his religious pursuits, Ammanati was a significant figure of the 16th century, endowed with great technical skill, capable of posing and resolving complex problems of design. His architecture is at once austere and elegant, grand in scale and conception. His sculpture reveals the attenuated proportions, generalization of form, and elaboration of composition common to sculptors of the later 16th century. Although the results may occasionally seem constrained, as does the colossal marble Neptune, other works are as successful as the bronze figures of the same fountain in their liveliness of invention, agility, and grace. Such portraits as those of the Del Monte tombs are profound and memorable characterizations. See also RENAISSANCE; ITALIAN ART.

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ANALYSIS. See TECHNIQUES OF ANALYSIS.

ANATOMY. See HUMAN FIGURE.

ANDEAN PROTOHISTORY. Among the civilizations and arts of pre-Columbian America (see AMERICAN CULTURES), two great groups stand out as having attained a high cultural level. One of these groups includes the peoples of central and southern Mexico and the zone of the Isthmus (see MIDDLE AMERICAN PROTOHISTORY); the other consisted of the peoples of the Andean region of South America. At the time of the European conquest, and even before, the Andean group was both racially and linguistically distinct from the other South American populations. What chiefly differentiated it from other groups, however, was that, although it was not itself completely homogeneous, it was almost completely unified under a single political-administrative organization generally known as the Inca Empire, or, in the ancient official language of the country, Tahuantinsuyu. Under the last sovereigns of Cuzco, this empire embraced the Andean chain from the first parallel, in what is today Ecuador, to southern Chile at the latitude of the Bio-Bio River (37° S). In the ethnological sense, the Andean cultural area extended even beyond the borders of this ancient empire and included present-day Colombia, Ecuador, Peru, western Bolivia, the extreme northwestern part of Argentina, and the territory of northern Chile inhabited by the ancient Atacameños and Araucanians, that is, down to the latitude of the island of Chiloe. Moreover, since no cultural zone is ever a closed compartment, the influence of this civilization was diffused in other regions of South America beyond the cordillera. Thus cultural complexes of recognizable Andean origin were transmitted both to entire neighboring sectors, or "offshoots," such as the Venezuelan region extending from the Sierra de Mérida to the Paria Peninsula in the Caribbean and the archaeological area of northwest Argentina, and to a notable

number of cultural islands at a considerable distance from the Andes, constituting enclaves in the mountain civilizations, principally along the course of the Amazon and some of its tributaries, to Maracá and Marajó in the delta of the great river, and even along the Atlantic Coast of Brazil (see SOUTH AMERICAN CULTURES).

SUMMARY. Architecture (col. 350): *Structure and types of masonry; Trapezoidal openings; The kulpí and the chullpa; Peruvian centers in the highlands. Ruins on the islands of Lake Titicaca; Pacific Coast centers; Religious architecture. The great terraced monuments.* Pottery (col. 365): *Distribution and style; The Columbian, Ecuadorian, and Chilean areas, The Peruvian area: a. The Chavinoid group; b. Mochica style; c. Nazca style; d. Paracas styles (Cavernas and Necropolis); e. Tiahuanaco style; f. Callejón de Huaylas (Recuay) style; g. First pan-Peruvian phase Tiahuanacoid, or Arдино; h. Southern Confederation. Ica-Chincha style; i. Chimú style; j. Chancay style; k. Cuzco ceramics (Inca style).* Sculpture and painting (col. 382): *Colombian stone sculpture. The art of Callejón de Huaylas (Peru) and Manabí (Ecuador) Monoliths of Chavín; Monoliths of Cerro de Sechin; The frieze on the Tiahuanaco doorway; Sculpture in the round of Tiahuanaco. Painting. Textiles (col. 389). The goldsmith's art (col. 393). Conclusions (col. 395).*

ARCHITECTURE. *Structure and types of masonry.* Three great geographic and climatic zones are distinguishable in South America: the Andes, running along the entire western edge of the continent, the rain forest occupying the whole northern and central section to the east of the cordillera, and the grasslands of the south. Of these three units, only the first is worthy of consideration for its architectural achievements. The cities, pyramids, and fortifications, and especially the palaces and temples, are peculiar to the Andean zone, particularly to its central area, and are unique in the whole of South America. Some of the less advanced peoples of the Amazon basin concentrated their huts in certain central locations near arable lands and fortified them with powerful stockades, many of them built in several concentric circles. But the Andean accomplishments are unique because of the scale on which they were projected, the complexity of the plans, the permanency resulting from the construction techniques and materials, and the artistic level attained in these examples of civil, religious, funerary, and military architecture.

At the northern end of the Andean area, in Colombia and Ecuador, very little or nothing remains of the early civil constructions. In Colombia, no traces remain either of dwellings or of what might be called temples, since both were built of perishable materials (reeds, wood, and clay). Although large centers existed, such as the cities of Tunja, Guanentá, Tundama, and Muequetá (which, according to the chroniclers of the Spanish conquest, had more than 80,000 inhabitants), nothing remains of these large settlements. Of Sogamoso, or Suamox, "home of the sun," also called Iraca, which was the religious center of the peoples of the Chibcha language and civilization and to which pilgrims came continually from every part of the wide plateau, too little is left to make possible a reconstruction of the plan.

At the opposite extreme of the Andean chain, among the Araucanians, the only indication of what the ancient dwellings were like is given by the modern *ruca*, a solid, windowless, rectangular construction of boards, with one of its short sides terminating in an apse; it was covered with thatch with a hole in the roof to let the smoke out. Moreover, the prevalence of small communities among these farming people explains the absence of large urban centers even in the northern provinces, at least as far as the territory of Atacama, where the ruins of stone walls and houses indicate that cities and fortifications existed there. In Ecuador the people lived in small villages with houses (*bohíos*) of adobe. In some coastal zones the soldier-chronicler Cieza de León describes houses of stone, built perhaps under the influence of the expanding Peruvian civilization. The local legend that the city of Quito was built with stone blocks brought from Cuzco is improbable, but it suggests that the art of building in stone was imported along with the other skills introduced by the conqueror Topa Inca Yupanqui and his successor Huayna Capac.

This rapid glance at the peripheral regions is sufficient to indicate that, in order to study civil, religious, and military constructions, it is necessary to concentrate on the central Andean territory — that of the Tahuantinsuyu. In this area are the ruins of a great number of ancient cities as well as large nuclei almost completely preserved. Some were abandoned long ago but were protected until recent times by their location in inaccessible spots; others now form parts of the modern cities that have been erected on top of them. Examples of these ancient cities are Machu Picchu and Cuzco on the plateau and Chan-Chan, Cajamarquilla, and Pisco in the coastal zone. In spite of the contrast in the physical surroundings and elevations of the cities in these two major areas, the architectural concepts and the details of the openings are substantially the same in both regions regardless of the difference in construction materials.

In the famous book in which he set down his impressions of a trip along the cordillera, Alexander von Humboldt left a summary but faithful description of the typical constructions of the inter-Andean corridor: "All the Peruvian architectural remains, which are scattered from the south up to the Equator, present identical characteristics not only in the cutting of the stone but also in the symmetrical distribution of the niches and the complete absence of external ornamentation." The construction details and the masonry types are, however, not so uniform as Von Humboldt assumed a century and a half ago. The most imposing for the great size of its components and for its archaic appearance is the type of wall called "Cyclopean," formed of blocks of stone which are frequently very large and which are rounded on their outer surfaces. The best examples of this style are the fort of Sacsahuaman (PLS. 154, 155) and a portion of the defensive structures of Ollantaytambo. Next in the order of size of elements is the so-called "polygonal" style, in which, again, huge stone blocks are used, but their exterior faces are almost completely smooth and they are cut to form clean and precise geometric shapes (some have as many as 10 or even 12 sides; see PL. 153). The individual blocks, which are never cemented, fit together so precisely that it has frequently and quite accurately been observed that it is impossible to slip the blade of a knife between them. A polygonal style is also used for structures made up of smaller elements, sometimes forming a mosaic. Next come walls of ashlar construction (*sillares*), some of which are of a particularly regular type, all the courses being of the same height, similar to our isodomus masonry (PL. 152). The so-called "cellular" wall is coarser, made of roughly hexagonal stones arranged irregularly but producing a quite pleasing all-over effect, when they are of the same size, because of their similar cut. Finally, the *pirca* is the commonest and crudest type of wall, of undressed field stones put together without cement but sometimes with mud. Between these fundamental types there are also transitional forms. The two styles first described have undeniable originality: the Cyclopean for its imposing massive effect and the purity of its tectonic concept, the polygonal for the complexity and variety of its design and the great size of the individual stones, with a sort of raised boss near their corners, which may have served some unknown purpose or may have been purely esthetic.

Trapezoidal openings. A distinctive characteristic of this architecture is the form of the doors. The openings decrease in width from bottom to top to a very perceptible degree (PL. 151), the inclination reaching a maximum of 20 to 23 per cent in the most marked examples. The outer opening often frames a second recessed opening, also with inclined sides, which emphasizes the effect. This second opening is narrower and lower, having a step added at the bottom and a second lintel above. The trapezoidal opening is the characteristic formal element of this architecture, and it gives the otherwise unornamented façade a distinctive character. When these openings are repeated at rhythmic intervals along the same horizontal line, as was customary in Inca constructions, they produce a striking impression of archaic solemnity, as in the traditional residence of the Inca at Colqampata, at the gates of Cuzco.

Here even the simple retaining wall, about 12 ft. high and over 324 ft. long, has been converted into a harmonious whole by means of the twelve elongated trapezoidal openings, nearly 8 ft. high, which decorate the structure. In the wall of Colqampata, as in other monuments, the openings are blind doors placed there solely for esthetic effect or, as some one has suggested, intended as shelters for the sentinels in inclement weather. These false doors, as well as the false windows that abound in all the ancient constructions of the area, are referred to as niches. The false windows differ from the real only in that they do not pierce the wall (PLS. 150, 157), and both are trapezoidal like the doorways.

The trapezoidal door appears in the plateau area in even the very earliest and most rudimentary types of structures. The famous fort of Sacsahuaman, which in its exterior plan may be considered the prototype of the Cyclopean style, has portals that are noteworthy for the size of the openings, for the huge stone blocks, never more than four to a side, which form the posts, and for the massive lintel. The result is a grandeur that, in spite of the simplicity of the means, rivals the analogous monuments of Mediterranean antiquity. Not all the doors of the buildings of Tahuantinsuyu are trapezoidal; rectangular openings tend to predominate in the later ones. This may be regarded as consistent with the preference for regular ashlar masonry, and thus it could be assigned to the last period of the Incas. Even the monolithic doorways of Tiahuanaco — the famous "Gateway of the Sun" (PL. 169) and that of the so-called "Pantheon" — have rectangular openings, an important detail that has not been taken into consideration in attempts to establish the chronology of these two monuments in relation to the successive civilizations of Peru. The attempt to explain the profile of the trapezoidal openings by a hypothetical influence from the ancient megalithic cultures of the Mediterranean is now somewhat dated (see MEDITERRANEAN PROTOHISTORY). This explanation is certainly arbitrary, at least in relation to the possibility of contact between these two cultures, although a number of examples in Peru recall Egyptian, Mycenaean, Latian, and Etruscan doorways. Another explanation, based on technical observations, has been proposed by Hector Velarde, who suggests that the prehistoric stone doorways of the plateau, both the trapezoidal ones and those with corbeled arches, originated in the translation into stone of forms originally constructed in clay and wood. The roofs, commonly formed of beams and branches covered with thatch, were either terraced or, more commonly, had gable ends.

The kulpi and the chullpa. The strange construction called the *kulpi*, typical of the provinces of Canta and Cajatambo in the Department of Lima (PL. 159), was roofed with slabs of stone. In general, *kulpis* were small buildings, customarily circular though occasionally rectangular or polygonal, resembling a mushroom, since the profile leans outward to the height of the cornice, which is the exterior extension of the slabs that form the roof. The walls seem to defy the laws of gravity, but actually they increase in thickness as they rise so that at the top they give the effect of a false vault, reducing the width of the space to be covered. In order to increase the size of the room, large slabs being difficult to obtain, a mushroom-shaped stone pillar was placed in the center and cemented with clay; the roof slabs rested on this and radiated out to the exterior walls. The simplest *kulpis* have a single door, the structure of which is especially interesting: it is markedly trapezoidal, generally about 40 in. high or, at the most, about 5 ft., always faces east, and has on its threshold a large square stone step; the side posts are generally single blocks on which rests a massive lintel. Niches in the inner walls were used as cupboards (PL. 159); the windows were always crudely schematic, at times mere slits or peepholes, especially in places that had to be defended.

The subterranean part of the *kulpi* was more complex. Under a pavement of slabs were granaries and places for the concealment of cult objects and offerings, and beneath this storage floor was a crypt for the remains of ancestors. In the more modest *kulpis* these basements are reached by a stair-

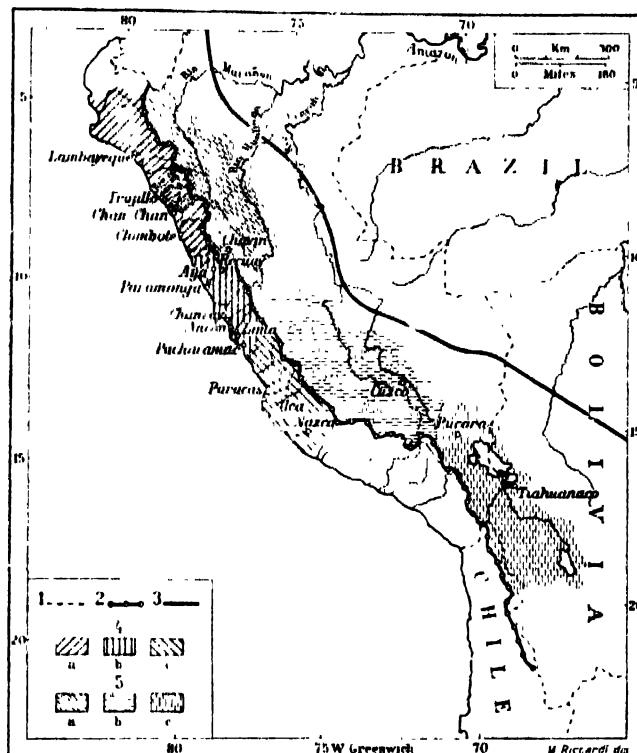
way inside the central pillar. This architectural type produced a great variety of more complicated and richer constructions, however, the most important examples of which may be seen in the groups of ruins of Chíprak, Rúpak, and Añay, sites that testify to the existence of true cities with squares, residences, and temples. An exceptional development of the trapezoidal doorway is found at Añay, where, in the façades of the main buildings, the door is transformed into a vestibule of enormous height, double in some instances, at the bottom of which is the entrance door.

There is an obvious connection between the kulpi and the *chullpa* of the region of Lake Titicaca. The best examples of the *chullpa* are found on the small peninsula of Sillustani near Puno (PL. 158), and a single zone of dispersion extends from Lake Titicaca along the plateau down to the Departments of Junín and Lima. Students of place names, moreover, have observed the frequent occurrence in the politically Peruvian section of this area of the ending *marca*, a word from the Aymara language equivalent to the *ayllu* of the Runasimi. The sources and implications of this linguistic and architectural connection deserve more attention than they have heretofore received. There is, however, a functional difference between the two structures, since the kulpi is a house tomb, the main floor serving as a habitation and the lowest level as a tomb, whereas the whole *chullpa* is a funerary monument.

Like the kulpi, the *chullpa* can be rectangular in plan, with rounded corners, but it is most frequently round. With regard both to dimensions and to architectural achievement, it is considerably advanced beyond the relatively elementary kulpi. On the shores of the lagoon of Oyuni (Puno), *chullpas* may be seen scattered about at random in dense groups; among those least damaged by earthquakes may be distinguished some higher and better constructed ones, of well-squared stones in ashlar masonry, generally with courses of alternating thickness. One of the most important, measured by Squier, had a diameter of about 16 ft. at its base and a height of about 39 ft. above the present level of the ground, where the diameter, in accordance with the characteristic form of these structures, was 18 ft., 9 in. The rectangular type, however, usually has vertical walls. *Chullpas* are scattered over the ancient territory of the Colla (Aymara) people, sometimes occurring in dense groups of a hundred or more, especially on the edge of the rocks, on the spurs of mountains, and on heights rising above relatively flat places. This grouping occurs particularly in the province of Puno, to the west of Lake Titicaca. If its purpose had been to provide space and light and to realize economy of materials and labor, the *chullpa* would have to be judged unsuccessful, since even in the most perfect and accurate examples the single inner room is a small blind space with a cubic area amounting to scarcely a tenth of the total volume of the building. The height and the diameter are absorbed by the walls, with a tremendous waste of materials. Artistically, however, the unknown builders of the *chullpas* were ingenious in their unconscious attempt to develop the vault and the dome, for in an indirect and incredibly laborious way, they achieved both, in shape if not in structure. Inside, the *chullpa* is in reality roofed by a pseudovault of projecting blocks, but the edges of the successive projecting courses were carefully rounded to obtain, in section, a perfect pointed arch and the over-all effect, in small size, of the tholos of the Mediterranean area. The same very patient operation was carried out on the exterior of the roof, which was in that manner transformed into a rather flat cupola. Four centuries ago the chronicler Cieza de León had already affirmed the exclusively sepulchral nature of these constructions: "The most notable thing about Collao [the land of the Colla], it seems to me, are the tombs of the dead. When I passed through that region I was surprised that the living did nothing to get spacious and pleasant homes for themselves, but instead adorned the sepulchers in which they were to be buried, as if their whole happiness consisted only in this."

Peruvian centers in the highlands. Characteristically, the cities of ancient Peru, especially in the mountainous regions, had in common with medieval cities everywhere the narrow-

ness of the streets, which very often also had to be adapted to irregularities in the terrain and frequently were interrupted by more or less steep stone stairways: there is a very long one, still intact today, at the entrance to the city of Machu Picchu, which runs along the top of a high wall and closely resembles the famous ramp at Hissarlik (identified with Homeric Troy). But, in marked contrast to Priam's capital, the cities of ancient Peru occasionally opened their denser quarters to give place to *andenes*, or terraces, three, five, ten, or more in succession,



Cultures of the central Andes. Key: (1) Modern political boundaries (2) Boundary between the highlands and the coastal region. (3) Eastern boundary of the Inca empire. (4) Cultures of the coast: (a) Northern, (b) Central, (c) Southern. (5) Cultures of the highlands: (a) Northern, (b) Central, (c) Southern.

supported by low walls, which permitted farmers to cultivate the steepest slopes of the mountains; the vivid green of the lush plots of corn and vegetables broke the monotonous aspect of the gray houses piled one above the other up the hillside. In a prominent place, almost always on the highest rock, was a military observation post that surveyed the valley below and guarded the nearby heights. There were also the cult buildings, including that called *intihuatana* in the Runasimi dialect, on the top of which the priests ascertained the position of the sun by a special gnomon. The best known examples of such solar observatories are those of Pisac, Kenko (PL. 156), and Machu Picchu.

The *intihuatana* of Machu Picchu is particularly notable, not only for its dominant position over what is perhaps the most nearly typical Inca city of the plateau, on top of an inaccessible height 2,296 ft. above the valley floor of the Utubamba (PLS. 147, 148), but also for its circular plan and its massive conical construction in large blocks of granite, which contrasts with the straight lines and the prevalent flat surfaces of the other buildings. This curvature of the walls is evident also in some other constructions of Machu Picchu (e.g., in the so-called "tower," PL. 149) and is not uncommon in general in the architecture of the plateau.

The archaeological site of Ollantaytambo (PL. 157) in the narrow valley of the Yucay to the northwest of Cuzco includes, as does Machu Picchu, fortifications, military buildings with walls of rectangular or cellular structure, and a group

of communal habitations; it was the site of a fort intended to protect the rear approach to the capital.

The architecture of Cuzco itself is naturally more complex (PLS. 152, 153). Cuzco (originally Qózko) is the primitive city of the founder of the dynasty, the eponymous hero Manco Capac. Since its legend-shrouded beginnings, the city of Cuzco has never lost its vitality. Nucleus and crucible of the greatness of the Inca clan, and subsequently the focus of its expe-

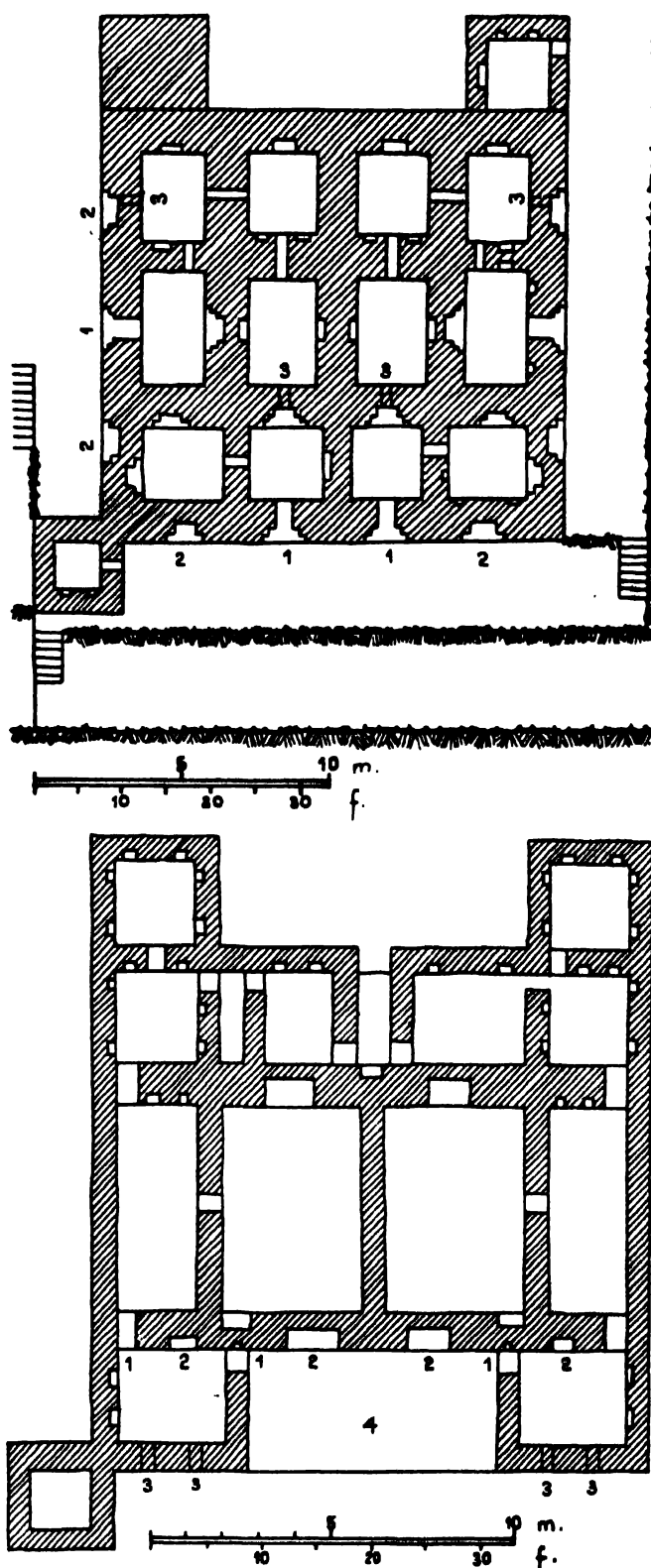
ditions of conquest and of the linguistic tradition represented by Runasimi, it did not decline with the arrival of the Europeans, but became the center of Spanish political and religious expansion. Even today it is the flourishing capital of a department and contains within its limits about forty thousand citizens, splendid churches, and a university. The Spanish colonial and modern constructions, far from destroying the traces of the ancient city, have in a certain way preserved and emphasized them. Two words from the Runasimi dialect give character to the traditional names of the quarters, squares, and districts: *pata* and *cancha*. The first refers to the terraces and steps that are necessary because of the uneven surface of the land; it appears as an ending in such names as "Huaycapata," "Colqampata," and "Quillipata." The second is the expression of the division of the city into a number of closed sectors, such as "Hatuncancha," "Amarucancha," and "Coricancha," each intended to house a *gens* or *ayllu* or to contain a group of ceremonial buildings. The city was divided into a high section, "Hanan-Qózko," and a low section, "Urin-Qózko," which were not differentiated merely according to altitude, as was supposed, but rather according to the two "halves" of the social nucleus so familiar to the sociologist. This distinction is preserved in the word *saya* in the villages where the Aymara dialect still prevails. Each half was then subdivided into a number of groups, or *ayllucuna*, and subgroups; and other categories were simply functional groupings, such as the community of priests, the satellites of the various families whose heads had held the supreme office, the cloistered women of the convents, and the courtiers.

Perhaps the most significant feature of Cuzco was its characteristic family habitations, which were not isolated houses, as at Machu Picchu, but communal living quarters for a number of families arranged in a rectangle around a central court and enclosed in turn in larger rectangles about 328 ft. square. Thus the dwelling units consisted of walled zones having a single exterior gate. The quarter called Coricancha, golden enclosure, contained the cult buildings, the main one of which was the Temple of the Sun, and around it were the habitations of the persons in the service of the sanctuaries and their families and the convent of the virgins, called *escogidas*, "chosen women," in Spanish and *acellacuna* in Runasimi. According to the chronicler Cristóbal de Molina, the quarter contained 4,000 persons of both sexes.

The fundamental idea that inspired the founders in laying out the city was that which still today dominates urban planning: a quadripartite division by means of four streets crossing in the central square, forming four quarters oriented by the four intermediate points of the compass. These streets bypass the periphery of the city to extend, at least theoretically, to the boundaries of the state and divide among them the Cuntisuyu, the Antisuyu, the Collasuyu, and the Chinchasuyu, which are the four "cantons" of the empire, called therefore correctly Tahuantinsuyu, or the four *mundi partes*. The central square of Cuzco, Huaycapata, represented for the *amautacuna*, or ancient wise men, the "navel of the world."

Ruins on the islands of Lake Titicaca. Brief mention should be made of two unusual and elaborate structures built in a beautiful setting on the small islands of the Sun and Moon in Lake Titicaca, the largest lake in South America. The first building, on the Isle of the Sun, is known as the "Palace of the Inca," and deserves the often misapplied name of palace.

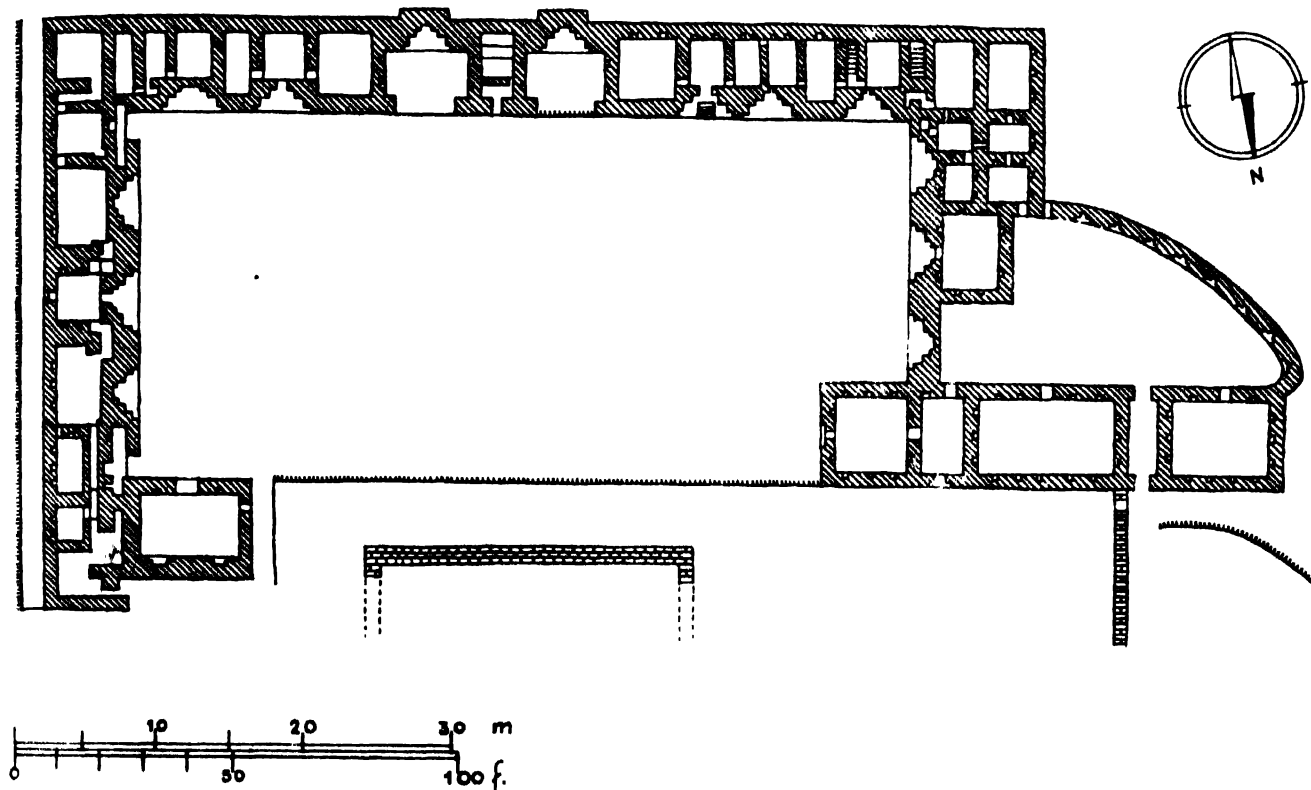
This complex two-story structure (FIG. 355), with its great refinement of ornamentation, is the only one of its type among the Andean constructions and could well have been the summer residence of a ruler, considering its exceptional natural position and the abundance of terraces and gardens surrounding it, some traces of which remain today. Of particular structural interest are the corbel vaults of the lower floor, reached by two trapezoidal doorways with relief friezes; the open loggia-terrace of the upper floor, which commands a panoramic view of the lake; and the niches and doorways of the rooms, which still preserve traces of their stucco facing, painted in yellow and red.



Isle of the Sun, Lake Titicaca, Bolivia. "Palace of the Inca" (from Squier). Above: Lower floor. Below: Upper floor. (1) Doors; (2) niches; (3) windows; (4) terrace.

The second monument, usually known as the "Temple of the Moon" (or the Pyramid of the Moon, or the Huaca de la Luna), should more properly be called the "Convent of the Virgins." It is a large, complex structure (FIG. 357), also of two stories, the ruins of which rise on the smaller, crescent-shaped Isle of the Moon. The structure of the walls is rather crude and irregular, but the building is architecturally valuable

trapezoidal. On the coast, as in the highlands, one frequently sees long walls of medium height, windows and niches placed rather high above the ground and repeated at regular intervals, and fortification walls one within the other, often enclosing minor buildings. The plasticity of the building materials used on the coast made it possible to decorate walls with intricate reliefs cast in molds and endlessly repeated. Also as a result



Isle of the Moon, or Coast, Lake Titicaca, Bolivia. "Convent of the Virgins" (from Squier).

for its eleven similar façades arranged in a row, in the center of which the two main rooms were situated, and for other original architectural details, in addition to the amphitheater-like arrangement of the stairways and terraces that descend from the area in front of the palace to the shores of the lake.

Pacific Coast centers. The level portion of the Tahuantinsuyu territory is a narrow strip, about 1,120 miles long and never wider than 124 miles, lying between the Pacific Coast and the western cordillera of the Andes. It is an extremely arid desert in which life can be sustained only along the beds of the small rivers carrying mountain waters which cross it in their progress to the ocean. All the coastal cities were built on these rivers at a short distance from the sea.

Students of Peruvian antiquity have tried unsuccessfully to establish a clear difference between the standards and style of buildings in the cities of the high plateaus and those of the cities of the coastal plains. Naturally, the building materials are different: stone, not generally used on the coast, is customary in the Sierras. But the general arrangement of the buildings and the architectural details are substantially the same in both areas. Along the coast, the only materials used are brick made of sun-baked clay (adobes and *adobones*), of various shapes and usually in large sizes, or tapia, clay sometimes mixed with small stone chips, which was compressed and shaped in wooden frames. Though such materials might be expected to deteriorate rapidly, the buildings have proved durable to the extent that their general outlines can still be deciphered. Examples are the ruins of the city of Chan-Chan in the north and the labyrinthine walls of Cajamarquilla, outside Lima (PL. 160). Despite the new material, doors and windows continued to be

of their being made of clay, the walls were thinner toward the top, more perceptibly so on the coast than in the Sierras. In some instances, the thickness of the wall at the height of 26 ft. is about 5 ft., almost half its thickness at the base (about 10 ft.).

A fundamental requirement of such large areas of dense population as Chan-Chan, the capital of the Chimú Empire, the largest such area not only in Peru but in all the Americas, is the provision of drinking water. The architects who built the mountain waterways were masters of the art of transporting water by means of aqueducts, both for domestic use and for irrigating terraced fields. In the plains, the problem presented greater difficulties. Tubular aqueducts of considerable diameter (*acequias*), supported by high, solid walls, were built across the arid deserts. The best example of these may be seen in the valley of the Chicama River.

The largest autonomous coastal state known to us was that of Chimú, which occupied the northern sector extending from Lambayeque to Pativilca; its principal city was Chan-Chan, near the modern city of Trujillo. The ruins of Chan-Chan (PL. 160) are extensive, covering a rectangular area of about 8 square miles. The city consists not of a succession of houses aligned along streets and lanes but rather of a complex of large enclosures, usually rectangular, each forming as it were an ecologic unit, separated from one another by thick walls and entered by a single gate. The dimensions vary, but the average is probably a rectangle 263 × 230 ft. Those who first saw them called them "palaces." Each palace has a sort of pool or water cistern in its interior, and in the less-damaged ones there is a mound, in some instances an artificial hill, known as a "pyramid" or, in the old Peruvian language as hispanicized

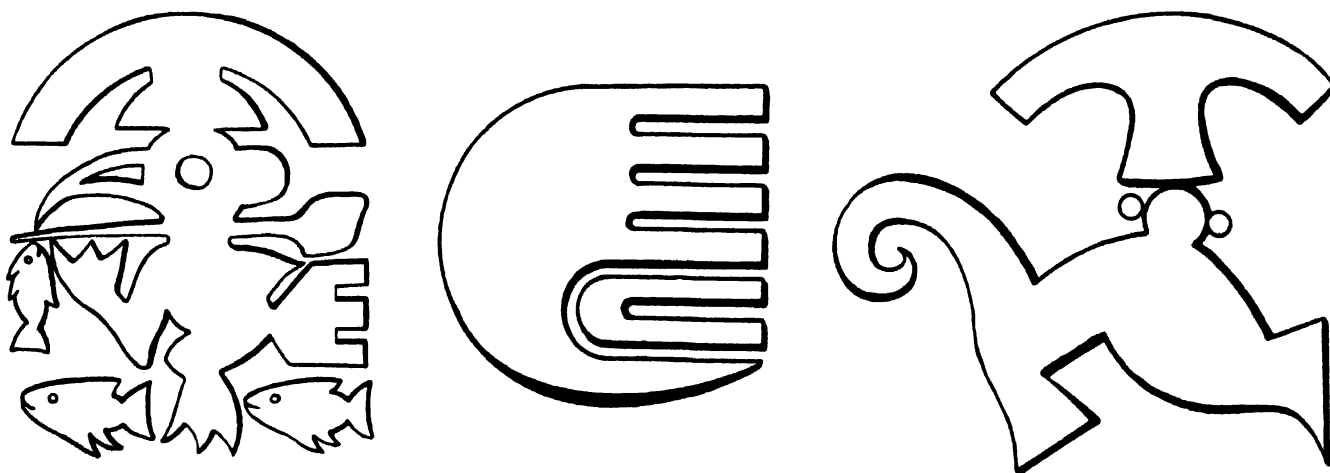
by the chroniclers, *huaca*. The best known are those of Obispo, Misa, Conchas, and Toledo, which have lost their original geometric shape; the one at Toledo today resembles a gigantic anthill because of the deep excavations made by gold seekers. Apart from these special structures, the large quadrangular enclosures of Chan-Chan contained small houses that were usually rectangular but sometimes round, arranged in various ways though generally side by side around a square. They always formed lines or closed groups that were in turn surrounded by a second enclosure. Their number varied from one enclosure to another, but it is easy to deduce that the inhabitants of the city were numerous.

This plan has been interpreted in a variety of ways. According to some scholars, the arrangement and the high walls almost hermetically separating the enclosures reveal the constant need for stout defense. In reality, however, the placement of the buildings and living quarters of Chan-Chan provides an example of the adaptation of urban architecture to social organization. The deciding factors were not the particular conditions of the arid and hot coast in contrast to the

constantly to repeat his basic pattern. The colors, which were fused into the plaster, must have intensified the impact of the relief. If the plaster had been preserved, we would see an effect resembling tapestries on the walls.

In the southern part of the coastal area, in the valley of Pisco, about 124 miles south of Lima, there is a less damaged example of a vast nexus of urban dwellings. Known popularly as one of the many "Inca palaces," it should rather be called *tambo* (*tampu*) *colorado* because of the red and yellow plaster remaining on some of the walls. The valley is closed off by long walls, a series of which rises from the floor of the valley and approaches the top. They are perforated by countless niches, placed rather high off the ground at regular intervals and in a straight line, in a pattern already observed on the plateaus. Here we find adobe and tapia in contrast to the square stones of the plateau region, but the balance between solid and space and the general volumetric aspect are the same. They appear to be only a clay copy of the walls of Ollantaytambo, which are like the famous parapets made of large boulders.

Another large city of the sandy coastal desert, situated



"Arabeque" decoration on the clay walls of Chan-Chan and other Peruvian coastal centers.

rainy and icy Sierras, as some scholars have suggested. Other important cities in the center of the country — Cajamarca, for instance, and Cuzco itself — are similarly divided. In the social and political consciousness of the Peruvians of antiquity, although they developed the concept of the monarchic and theocratic unity of the state, the cohesion of the upper-class community always remained very strong. In preserving their own group unity, they also jealously preserved the notion of their mythical origin (*pacarina*) and of the hereditary chief (*curaca*). Thus may be explained the tradition of burying the upper-class dead in separate cemeteries included in the area where the nobility lived, as in Chan-Chan and elsewhere. Smaller communities, such as Machu Picchu, Wifay Wayna, and others in the mountains or on the slope descending from the plateau to the Pacific, had family houses that were not segregated in enclosures; from this we must conclude that they represented a group homogeneous with respect to their tradition, their myths, and the person of their *curaca*.

The public architecture of Chan-Chan and its environs exhibits profuse decoration of interior and exterior walls with reliefs cast from molds (PL. 161). The tapia and the superimposed stucco were imprinted with positive geometric designs (reticular patterns, spirals, small checkered squares, and lozenges). Often the reliefs show outlines of delicately stylized elements (human hands, helmeted warriors, and strange compositions of animals and other profiles, FIG. 359). This decorative scheme, which the early scholars referred to as "arabeque," is to be interpreted as the translation into plastic form of the esthetic principles of a race of weavers. The design, whether simple or intricate, is endlessly repeated in all directions, reflecting the "horror vacui" that causes the weaver of rugs

about 9 miles from Lima, is Cajamarquilla, so called in the Spanish adaptation of an unknown original name. It is a vast field of ruins which Middendorf estimates to cover about 4,780 sq. yd. (PL. 160). A great many rooms and rectangular halls are located in this area. The walls, generally well preserved in certain sectors and higher (13 ft.) than those in other ruins of ancient cities, are made entirely of tapia. Among the masses of ruins there are at least four sections resembling citadels, the remnants of artificial mounds that were perhaps either temples or fortresses. We know nothing of the city's founding, its population, or its end. Was it abandoned because the valley became arid following a breakdown of the aqueduct? The Spanish conquerors did not know of its existence, nor did either the chroniclers or native tradition.

Religious architecture. One of the major difficulties in the study of central Andean religious architecture is the fact that both tradition and many local writers often attribute religious functions to a great many buildings that probably served other purposes. This confusion may be partly attributed to the Runasimi words *huaco*, meaning any antiquity from graves or cemeteries to ruins but mainly the ceramic pieces, and *huaca*, meaning either an artificial mound or midden or a disintegrated ruin. In the oral tradition and in the Spanish chronicles, *huaco* came to denote everything associated with death, the ritual, and the supernatural: burial grounds, statuettes of penates, and vases buried with the dead, as well as any kind of pottery. *Huacas* included the artificial hills so abundant in the central Andean countryside, whether they were called *castillos* or pyramids. The function of these, whether that of fortresses, temples, astronomical observatories, or cemeteries, is a real puzzle.

Excavations and the examination of written sources have shown that no single answer is valid in all cases. The evidence differs from place to place, and, even worse, indications of a variety of uses are often present in the same monument. It is desirable therefore to examine the forms of these structures.

Of those buildings that had unmistakable devotional and ceremonial functions, the "kalasasaya" was the most elementary. This structure was similar to that famous type of enclosure surrounded by stones of large dimensions set up vertically which can be seen in northern Europe, the Mediterranean, the southern Asian peninsulas, and the archipelagoes of the Pacific. Among the most noteworthy examples on the central Andean plateau are the so-called "Circles of the Sun" of Sillustani, a tiny peninsula in Lake Umayo, near Puno, and a veritable museum of antique structures with a perfectly circular plan, surrounded by a hedge-like row of large, rough, irregular stones. In the inner curve stand two menhirs. The largest of these enclosures measures 123 ft. in diameter. The circular plan is not the only one found in old Peru. The author was able to photograph and describe the small double square of Queneto in the northern valley of the Virú, on the coastal plain. Although it still preserves the archaic look and characteristic megalithic structure, even intensified, its plan consists of two unequal quadrilaterals connected to one another by a slender, short dromos. The larger enclosure, which may be of a later date, is 142 ft. long and 107 ft. wide. The smaller one is a regular square 91 ft. wide, with one menhir in the middle of each side. Inside the enclosure, one gets an impression of stark and solemn archaic beauty. The small, fragile votive urns that Rafael Larco Hoyle found during the excavation of an adjacent third enclosure, as well as the character of the site and of the monument, leave no doubt as to the ceremonial function of the double kalasasaya of Queneto. It represents a civilization distinctly different from that surrounding it in the same valley. The thousands of fragments and handles of beautifully painted vases spread over the stony area certainly belong to the Mochica period.

Among the religious structures of Peru, the temple of Wiraqocha at Cacha (PL. 163) is quite well known. The attempt to reconstruct its original plan has aroused much conjecture and controversy among archaeologists (see PERU).

Pachácamac, the greatest religious center of old Peru, is located in the Lurin Valley about 11 mi. south of Lima. The city, the even more extensive necropolis, and the two huge monuments referred to as temples originally rested directly on rock and were also surrounded by it. Today they are literally covered with sand fallen from the adjacent heights. The landscape is nevertheless still dominated by the two "temples," which are actually artificial hills with terraces. Although quite similar to those on the Peruvian coast, they have their own individual character (PL. 162). They are far apart, and their imposing mass faces the sea. The older monument antedates the Inca domination, and the second was built by the Cuzco government. Both are truncated pyramids with a rectangular base and consist of successive levels that form gigantic steps. They differ in construction, though both are made of sun-baked clay. The older structure is made up of minute elements no larger than ordinary bricks, whereas the Inca temple is built of much larger adobes such as were used in later construction. The interior arrangement of the pre-Inca structure is not known, but it is known that in its inner chambers the priests of the famous oracle of Pachácamac officiated. Its prophecy ruled all Peru, as is proved by the artifacts of diverse origin found in the tombs, and more precisely by the variety of modes of burial used in the adjacent necropolis. It certainly also contained a secret corridor in which sacrifices of animals and even human beings took place in front of a crudely carved wooden idol which the conqueror Hernando Pizarro destroyed before the eyes of the priests. Max Uhle, who made excavations along the base of the structure, recognized three levels: in the lowest were artifacts of the old style of Tiahuanaco, in the middle were fragments of white-red-black vases, and in the upper, of Cuzco or even Chimu make.

The second monument is similarly built of adobes, but it has been found that the thick clay walls rest on rock foundations, after the fashion of Inca buildings. The sides are a zigzag line of five high steps corresponding to five platforms, the lowest measuring 600 × 510 ft. and the fifth 295 × 197 ft. There are flights of stone steps leading from one terrace to the next; a magnificent gateway with trapezoidal openings; pilastered corridors; and, at the top, various rooms with corresponding vestibules and two halls. Reliable documentation dating from the early times of the Conquest indicates that the temple was built by the government of Cuzco for the purpose of imposing the sun cult on that center, which in earlier times had been used to receive religious pilgrimages, since they did not dare destroy the old sanctuary of the oracles. The "Temple of the Sun" was entirely painted in red. The pre-Inca building supposedly had a polychrome coloring, which has almost completely disappeared. From its vestiges, J. C. Muelle concluded that all the platforms were painted in vivid colors, predominantly red and yellow, applied in large vertical stripes. On the upper stories, there also appeared a more or less diffuse greenish-blue coloring, against which were painted, large enough to be visible from a distance, schools of fish, birds, and occasionally human beings, in contrasting colors and outlined in black.

The great terraced monuments. The two largest monuments of Pachácamac follow faithfully the building concept characteristic of the Peruvian pyramids, particularly those of the central coastal territory. In the environs of Lima there are today the Huaca Juliana in the valley of Miraflores, the Huaca Trujillo on the site of Cajamarquilla, and the so-called "Aramburu," or "Maranga," group comprising six artificial mounds. It is not easy, for the reasons already mentioned, to determine accurately the original purpose of these gigantic structures. According to P. E. Villar Córdova, "the lower story, or rather the labyrinth of the subterranean structure, contained the necropolis proper, whereas on the upper stories ceremonies and sacrifices took place as well as the practices of the star cult."

The Maranga group includes, in its northwestern section, the mound called the "Fortaleza" (fortress), a military structure surrounded by three thick rampart walls made of tapia and stone. In front of them, toward the south, rises the highest pyramid, whose western side is now partially destroyed. Originally, its large rectangular plan was 0.6 mi. long and 0.3 mi. wide. The uppermost platform is 164 ft. high. As with the Inca temple of Pachácamac, it is perfectly oriented, its main axis being east and west. All the pyramids of this group consist of superimposed terraces connected by concealed steps. The wall supporting the escarpment of the platforms is a sturdy one about 6½ ft. thick. The adobes, cemented with layers of well-prepared mud, are as large as ordinary bricks and were handmade (they still bear distinct fingerprints). A few years ago, when the public authorities had one of these artificial hills opened for the passage of the highway from Callao to Lima, the transverse cut laid bare galleries and burial corridors containing bodies, artifacts, and household utensils. The smallest artificial mound of the same group, which was excavated systematically by J. Jijón y Caamaño in 1928, appears to have been used more extensively as a burial ground.

Stratigraphy has demonstrated how the foundations for four pyramids were built on top of one another, enlarging the original plans. The adobes used here varied in shape and size according to the various stages in the chronological development of the adobe. The tombs of the third period are layers of reeds and rushes on which the body lies supine, whereas in the last period the body was wrapped in the fetal position, as on the Ancón coast. On top of the southern pyramid stands the so-called "Palace of Maranga," the walls of which are decorated with strictly geometric reliefs consisting of series of lozenges with broken lines, vaguely reminiscent of the Mitla frieze. The pyramid of Nievería is a dense accumulation of tombs covering an area of 2,390 sq. yd. The neighboring Huaca Trujillo pyramid, on the other hand, whose galleries were thoroughly searched by treasure hunters, does not seem to

have been a burial ground. Villar Córdova placed it in the category of fortifications. Huaca Juliana, only $2\frac{1}{2}$ mi. from Lima, seems to have been built as a pyramid with no special purpose.

Among the pyramids of the southern part of the coast, the group called the "Fortaleza" is outstanding. According to Means, it had the same importance for the confederation of Chincha as Chan-Chan had for the state of the Gran Chimú. At present it is in a very bad state of preservation, and virtually nothing can be deduced from its ruins, which have been extensively damaged.

The two most famous and imposing of the terraced monuments are located in the northern portion of the coast, in the valley of the Moche River, adjoining Chicama Valley and the historic city of Trujillo (PL. 163). The tremendous masses of these monumental buildings face one another across an open space about 1,645 ft. wide. The so-called Huaca of the Sun is the larger, with a total length of 755 ft. exclusive of the ground floor, which permits ascent by means of a connecting passageway at the smaller northeast side. The height, today only a little over 131 ft. but judged by Squier in 1874 to be more than 164 ft., consists of a pyramidal nucleus rising about 75 ft. on the platform, which averages 59 ft. in height. Although the eastern portion of the entire structure is almost intact, the southern part has been heavily damaged by the floods of the Moche. At the smaller side, facing southwest, the entire elevation of the seven terraces superimposed on the larger platform, which in turn is elevated five steps above the ground, can be seen to better advantage.

The eastern part of the Pyramid of the Moon stands on the sharply pointed rock of Cerro Blanco; it measures 263×197 ft. and rises about 68 ft. above ground level in six terraces. It is surrounded by greatly damaged ruins, remnants of a large ceremonial complex now almost entirely effaced. The general layout of the Moche pyramids, particularly of the Huaca of the Sun, reminded Max Uhle of those of Copán in Guatemala and Monte Albán in Mexico, since a series of broad terraces rises from an elongated platform on the rectangular base. This arrangement provided space for the erection of houses, porches, halls, and passageways that accommodated special groups of guards and functionaries and at the same time furnished a solemn background for the ceremonies. The interiors of the two Huacas of the Sun and Moon remain unexplored except for the portion previously mentioned as exposed by floods and except for a few subterranean passages opened by treasure hunters. These two structures were used to some extent as burial sites, and at the foot of the Sun pyramid and all around the Moon pyramid, groups of tombs have been discovered with bodies arranged in different ways, some in well-constructed individual or group coffins. These monuments, summarily described here, do not belong to the period of dominance of the Gran Chimú. Rather they were part of a large center inhabited by a people of whom every trace may already have been lost at the time when the nearby city of Chan-Chan flourished. As early as 1900, Max Uhle was able to prove that, far from being the work of the Incas, these monuments go back to the old pre-Inca civilization, namely, the Mochica period, as evidenced by vases and fragments decorated in a polychrome style peculiar to the civilization that he has called Proto-Chimu.

Monuments can be singled out which were used for religious and ceremonial purposes as well as for burial and defense, with the result that it is difficult to discern which function predominated. Other structures appear to have been fortifications, although here, too, there were enclosures used for ceremonial cults. Apparently this is true of all the structures consisting of terraces and superimposed platforms and traditionally called castles, such as the stone castles of Chavín and Vilcas-huaman.

In opposition to popular usage, archaeologists have always preferred to call the structure at Chavín de Huántar a "temple." It is located in the province of Huari (Ancash), at an altitude of 9,840 ft. In the course of his exploration in 1919, Julio Tello found that its function was only partly religious; it was also used for shelter and defense, and its inner walls enclosed

special rooms for the safeguarding of religious sculptures. The structure is partly subterranean and apparently had two wings; one portion has been destroyed or filled up by a flood. It consisted of two superimposed platforms formed by stories of a massive building. Flat stones were used for roofing. The Peruvian architect Velarde asserts that the entire ground plan must have covered 32,800 sq. yd., that the platform, measured at several points between the exterior and the base of the upper terrace, was 197 ft. wide, and that the whole constituted a huge truncated pyramid. Portions of the outside wall have been uncovered, including some large stone sculptures in the shape of human heads with a menacing expression or of serpents and wild animals. The structure is made almost entirely of granite, and the generally flat blocks were cemented with clay. It is characteristic of this wall that each course of moderate height alternates with two thinner courses.

There are several similar though smaller castles in the neighboring region. According to Cossio, they are to be found in Aija, Cajacay, Passash, Nauamarca, Chacas, Porco, and Tinyash. The peculiarity of these structures is that ascent from a lower story to the upper ceremonial part is made by means of steps to which the access is subterranean or which are hidden in the mass of the structure. Often the group of buildings is protected by a nearby walled fortress where the populace took refuge in times of peril.

The defensive character of the city of Machu Picchu and of the garrison of Ollantaytambo is well known. But the most imposing example of a defensive structure is that of Sacsahuaman (royal eagle), the largest fortification in America, situated on the heights north of the city of Cuzco (PLs. 154, 155). The fortified part consists of three terraced rows at a short distance from one another. Its ground plan is a zig-zag with 20 to 30 large bulwarks on each serrated edge.

Although Sacsahuaman has been frequently visited and described ever since the early times of the Spanish Conquest (see PERU), the fortress of Paramonga, located 60 miles north of Lima, is certainly no less well known (PL. 164). Marking the southern border of the autocratic coastal state established by the Gran Chimú, it is popularly known as the "Fortaleza" and had given its name to the river flowing at its feet. Its defenders were successful in repelling the Inca invaders of Chimú. It forms part of a defensive system, extending in a long line across the shore and facing the Pacific, which provided support for the northern wing. The rock heights of the Cerro de la Horca were a perfect site for an observation post and guard station.

This garrison was connected with the fortress by other buildings, and thus the auxiliary defenses were extended southward. The fortress itself is built on a natural elevation of the rugged terrain, and its ground plan forms a somewhat irregular rectangle whose longer axis runs south and north. Three well-marked platforms are distinguishable. The lowest of the three, which also has the most irregular contour, supports the bulwarks, each with two terraced stories, that fortify the four corners. The entire structure including the uppermost platform rises to a height of about $65\frac{1}{2}$ ft. On top, toward the south, there were various rooms and corridors as well as an ambulatory. The walls were ornamented with yellow plaster, and there are also traces of mural panels consisting of white and red rectangles. The rooms had niches. On the middle platform, the walls of the houses had predominantly red and yellow plaster decorations. The construction material was well-worked adobes of regular dimensions, and the joints were reinforced with small, flat stones. The entire structure is surrounded by a wall varying in height from 9 to 19 ft., with a parapet and an underpath for the sentries—a remarkable feature. A group of buildings fitted with portals, passages, and guardhouses forms the entrance to the fortress. Langlois called these the "propylaea."

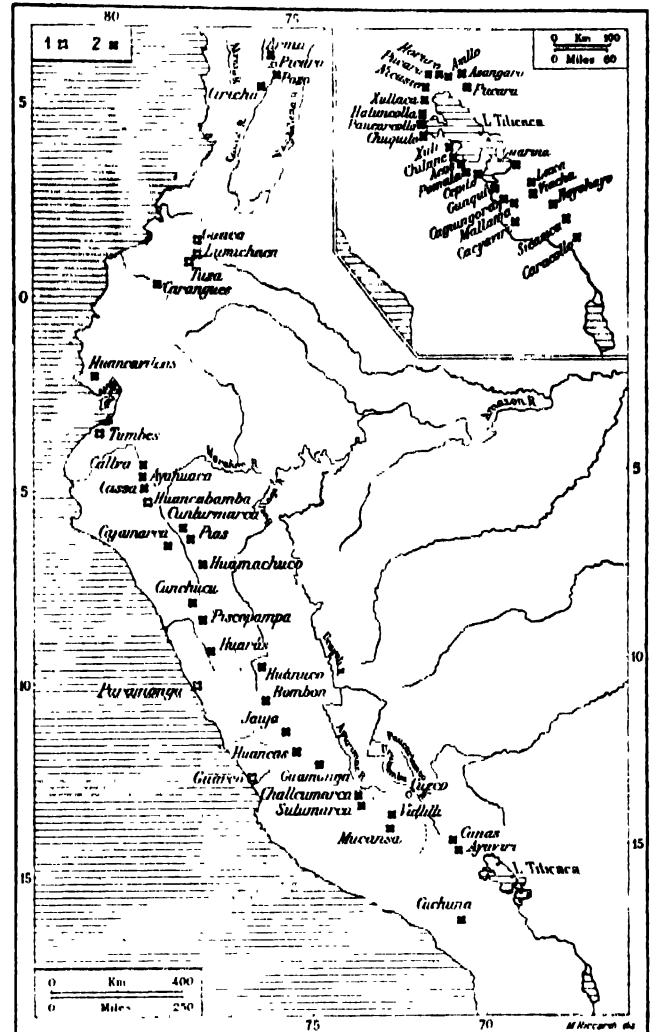
It is evident, therefore, that in both the large and the small states of the old civilization of Peru the art of fortifying cities, religious places, and strategic passes was already known. The seashore also had to be fortified, as it provided the easiest access for the invaders of the coastal kingdoms. The Incas themselves chose it for their first attack on the territories of the Gran

Chimú and were severely beaten before the Cerro line of Horca Paramonga.

Not all fortresses were built with carefully cut stones as were those at Pisac, Ollantaytambo, and Machu Picchu and in the Cuzco region. Some were built of roughly hewn stones and erected by provincial workers locally hired by the Inca government. Nordenskiöld discovered the fortification of Incallacta, in the Bolivian province of Cochabamba near Mizque, which represents a link in the large chain of Inca fortifications east of Cuzco, attached in large part to the eastern cordillera of the Andes, connected with the northern groups of Chile (the fortresses of Lasana and Chiu-Chiu) and with the north-west groups of Argentina (Pucará de los Sauces, Quilmes, and others of Jujuy province). In addition to the Cuzco group, other forts form a direct line toward the north, including Taratambo on the slope of Floresta near Tarma, Huánuco Viejo, and those that lead up to the fortress of Collo in Ecuador. Attempts have been made to identify the main lines of fortifications in terms of their sequence. Up to the northern limit, formed by the Urubamba basin, there are 25 that evidently form a continuous defensive line. Their greatest concentration is south of Titicaca, in the Aymara territory. But if this plan were integrated with the fortifications farther north, even as far as Ecuador, it would form a cartographic picture of the entire development of the "Limes Incaicus." McCown has shown that the numerous circular fortresses and the walls, many of them connected, of Marca Huamachuco on the high Moche are pre-Inca structures. A map drawn many years ago by Radamés A. Altieri indicates with the conventional signs those fortifications of purely Inca origin and those built earlier. The corollaries suggested by this map are of paramount importance. One sees immediately that fortifications, or *pucara*, flank the left shore of Lake Titicaca, from Nicasio and Juliaca on the northern angle down to Guaqui to the south, whereas on the southern side of the lake are two parallel lines formed by eight structures. Five more fortifications encircle the northern side, so that only the eastern bank, which is protected by high mountains, has no fortifications. From Titicaca to Tumbes and Huancavilcas, which dominates the Gulf of Guayaquil, the map shows some 21 fortresses that appear to be of pre-Inca construction. Farther north there is the group of Carangues in Ecuador and a group in Colombia which comprises forts (Arma, Pozo, and Ciricha), observation towers (Pozo), and the type of hole called a "wolf's mouth," which contained sharpened stakes (Picara). These data illustrate the extent of the development of defensive architecture in Andean America. It is highly desirable that the critical study of its origins be resumed and completed.

POTTERY. Distribution and style. In North and South America, ordinary pottery for practical use is widely scattered from southern Canada to north central Patagonia; painted or otherwise decorated pottery is to be found in the North American area that includes the territory once occupied by the Pueblo Indians, ancient Mexico, and Yucatán, in Central America, and in South America uninterruptedly down the Andes to the middle of the Chilean corridor and also in Venezuela and northwestern and northern Argentina. Within these vast areas, Spinden (1928) identified a somewhat more restricted but still fairly considerable zone in which clay statuettes have also been found. These images, which Spinden calls "archaic," are the first phase in the representation of the human figure from which the art of pottery in North and South America received its essential impulse, as to both form and decoration. Within this area, which resembles a corridor that takes its shape from the isthmus of Central America, the two zones of ceramic art, the Middle American and the Andean, not only merged but developed numerous methods and techniques with distinct elements of continuity. In spite of the correlations between these areas and their profound influence upon one another, one type of ceramic art, that of the Andes region, surpasses the others in quantity, quality, and variety of production. The pottery of the Andean peoples, particularly the Peruvian, became famous because of its striking shapes and

colors. A host of *huaqueros* found profitable employment in disposing of this pottery to intermediaries, selling everything that was discovered daily, except for crude and unsalable items. In this way, numerous public and private collections throughout the world were formed. This pottery was not at first classified or identified according to place of origin; it simply accumulated in glass cases as an element of purely esthetic interest or exotic curiosity until Max Uhle revealed the results of his



Andean fortifications. Key: (1) Pre-Inca; (2) Inca (after Altieri).

excavations and the historical succession of the forms and styles. He established a systematized basis for classifying the new material taken from the tombs and for reclassifying all the previous examples haphazardly assembled in various collections. Nevertheless, although it has made a positive contribution, the introduction of research methods has also resulted in overrefinements. Ever-increasing proficiency in detecting the slightest differences in firing, color, and paste and in the countless formal and ornamental characteristics of the pottery and terra-cotta fragments constantly reveals more and more minute and precise distinctions, and the series of variations developed into a complicated pigeonholing system with an extraordinary number of subdivisions. Although this was certainly a positive achievement of modern research, scholars gradually became convinced that for every stylistic variation there was a corresponding specific culture. In this way arose the classifications of the red-white-black terra-cotta culture, the three-legged-vase culture, the black *bucchero*, and so on. A number of researchers, among the most recent being Horkheimer and Valcárcel, protested, disturbed by these possibly misleading terms.

According to Valcárcel, "When we review carefully the enormous amount of archaeological evidence found in pre-Columbian Peru or analyze the results of ethnographic research now in progress, two facts appear to be in contradiction. On the one hand, there is the incalculable variety and wealth of forms that can be attributed to clearly defined styles; and on the other a conception of the world, an artistic rhythm and technique, and a basic spirit cancel morphological distinctions and confront us as a cultural entity." He goes on to say, "This argues not diversity of cultures but diversity of styles." Valcárcel here refers to the profusion of "cultures" discovered in Peru, but the same observation may be made of the entire belt of the Andes. It would therefore be preferable to use the terms "style," "manner," "period," and "phase" rather than "culture."

The Colombian, Ecuadorian, and Chilean areas. Two equally important influences can be traced through the valleys of Colombia: that of a thriving and fully developed Middle American art and that of an infinitely productive Peruvian art. The resulting fusion of forms and designs makes it difficult to identify many of the examples with certainty.

In the northern Andes, one of the most widespread types of pottery is the urn used for what ethnologists call "secondary burial," to contain human remains reduced to bones by previous burial. Most of these urns bear portraits of persons, but no attempt is made to reproduce the proportions and features faithfully. Sometimes the entire urn represents a realistic type of bust, as in certain examples from the Chíncha region of Colombia, consisting of the head and torso of an important person wearing costly gorgetlike necklaces, magnificent tall tiaras, and sometimes even two unusual scarves in relief, worn diagonally across the chest as a cartridge belt is worn. The face is rather clumsily executed, the lower part of it hidden by an enormous nasal pendant, or *nariguera*. Along the valley of the Magdalena River, however, the effigies on the urns are merely small statuettes of persons seated on the lids with their arms resting on their knees. The urns themselves are notable for their elongated cylindrical form. In the Colombian area, many detached statuettes have been found, belonging more or less to the standard types of terra-cotta figurines found in American archaeology from Mexico to Argentina and representing, according to Spinden, its "archaic horizon style."

Although cylindrical urns seem to have originated in Colombia, they are also found, with superimposed statuettes, throughout northern Ecuador. The Chibcha "busts" of warriors and chieftains are related in formal use of line and mass to the technical processes of Colombian artisans, whose unsurpassed excellence of craftsmanship produced magnificent work in gold, silver, and alloys of precious metals. Indeed, the details of the busts are very like those of the golden figures discovered in both Panamanian and Colombian tombs, as we can see from Lothrop's finds at Coclé. Colombian pottery shows the usual terra-cotta yellowish-gray or red and is sometimes painted one color, but the decoration is more often incised or appliquéd. The characteristic and rather elegant forms include the three-legged vase and the long-stemmed cup that archaeologists call *compotera*.

Several types of pottery are peculiar to Ecuador, where pottery makers were extremely active. The *silla de barro*, numerous examples of which have been found in the province of Cañar, is a drum-shaped table, decorated on the outside with motifs found on dishes and other types of pottery and probably used ceremonially. Other types include the slender water jars from Carchi, without legs or handles, decorated in the negative style (see below); the black *bucberos* from many localities; and from Elen Pata, the beautiful handleless amphorae which look like pitchers; these comprise the greatest ceramic achievements of Andean Ecuador. The urns taken from the region of the Napo River where it joins the Aguarico are equally beautiful; although this area is part of Ecuador, it is typical of Amazon country.

At the opposite extreme of the Andes, in Chile, the local ware is mainly utilitarian and at most very simply decorated. In the oases of the Atacama desert, however, a considerable

number of vases and urns were dug up which were decorated with two types of painted motifs: either large designs with strongly contrasting colors or very minute designs as delicate as those of the Chíncha style of southern Peru. There are also examples of Chilean pottery, fewer in number but of fine workmanship and excellent style, which were either imported, as was the classical "aryballus" of Cuzco, or copied by local artisans from famous patterns, as were the Santamarian urns of the Calchaquí valleys of the Argentine. Many modern scholars have argued from these copies that the northern part of Chile was inhabited by a people related to the Diaguita and refer to them as the "Chilean Diaguita." These brief observations indicate that in the art of pottery making the southern extreme of the Andean belt (Atacama, the Diaguita zone of Chile, Araucanía) was a region less inventive than receptive of influence. In contrast, the northern region (Colombia and Ecuador) attracted and circulated both the northern and southern forms of that art, modifying and adapting them in its own ways. (See PLS. 173-175.)

The Peruvian area. In the central Andean region, where nonindigenous forms had slight influence and were little utilized, original work of high quality was produced. In the coastal region described earlier, where civilized life could flourish only along the rivers that flowed in almost parallel lines to the sea and where communications were therefore limited to certain clusters of neighboring valleys, three distinct stylistic areas are distinguishable from north to south. The northern group includes the valleys of Chicama, Moche, Virú, and others, up to Chimbote; the central cluster includes the valleys of Chancay, Ancón, Rímac, and Lurín; the southern cluster comprises the centers of Nazca, Ica, Pisco, Paracas, Acari, and others.

In the inter-Andean corridor of the Sierras, the currents of influence flowed north and south with comparative ease. Here are found in turn the northern sectors of Callejón de Huaylas and the Chavín de Huántar zone; the central regions of Huánuco, Jaén, Upper Apurímac, and Upper Urubamba; and the southern sectors of Yauri, Sillustani, and Tiahuanaco. The difficulties of lateral communication peculiar to the coast were partially offset by the Andean corridor, where the connecting valley floors allowed a certain measure of influence to ascend the mountains. This explains the origin in the mountainous zone of such pan-Peruvian styles as the Tiahuanacoid and the Cuzqueño.

Apart from minor distinctions, the following stages of development can be established: (1) The initial period. Along the northern coast the Chavinoid styles predominate, and along the southern coast the Paracas Cavernas. (2) The period of diversification. Along the northern coast, the Mochica, on the central coast the Proto-Lima, and on the southern the Nazca; on the Sierras, the Recuay or Callejón de Huaylas, and in the Colla zone the Tiahuanacoid, similar to the Nazca. (3) The first pan-Peruvian epoch. The Tiahuanacoid influence was extended throughout Peru. (4) The reaction of the coastal confederation. In the northern region the Chimu predominated, in the central the Chancay, and in the south the Ica; on the Sierras the style of the upper Moche, in Urubamba the art of Cuzco, and in the Colla zone the so-called chullpas period flourished. (5) The second pan-Peruvian period, during which the Inca style was diffused. (6) Spanish domination, beginning in 1532.

According to Bennett's calculations, the entire development took place in little more than a millennium. More recent data would double this span.

a. *The Chavinoid group.* Before 1920 the art of Chavín was completely unknown and the few examples were attributed to Tiahuanaco, until then considered the most ancient Peruvian style.

The term "Chavín style" came from the supposition that the building known as the Castillo of Chavín de Huántar was the main source of this art, an idea connected with the theory, propounded by Tello, that the Peruvian was originally a "mountain" civilization. In the long-standing controversy concerning

whether the coastal civilizations have historical precedence over those of the Sierras, considerable progress was made through the efforts of R. Larco Hoyle. According to Larco Hoyle, the rock reliefs of the Castillo of Chavín, decorated with stylized figures of the condor, the jaguar, and the serpent, were not necessarily a part of the artistic and productive terra-cotta culture of the tombs found along the wide northern littoral. He described the attempt to classify them together as artificial and refused to believe that so widespread a culture could originate in a small, isolated, rustic area such as the Marañón Valley. He was of the opinion that the actual religious center must have been the Nepeña Valley, whose inhabitants had constructed in a secluded place the sanctuary popularly known as the "Castillo." Official archaeology has substantially accepted Larco Hoyle's objections. As Bennett realized, not only was there insufficient evidence that the plateau served as a center of diffusion of the style, but there is obvious and incontrovertible proof that it spread along the localities of the Pacific littoral, where stratigraphic study has determined the chronological relation of this style to the others. Moreover, Larco Hoyle's nomenclature has been accepted for the furnishings in Chavín style excavated in the coastal valleys, and modern contributions to the subject all refer to Cupisnique ceramics as the most ancient discovered, whereas "Salinar" is the name usually given to the period of transition leading to the Mochica style. Nevertheless, Larco Hoyle's system of subdividing every period so rigidly into initial, middle, and final phases appears to be subjective and arbitrary. Kroeber has distinguished the stylistic variations more satisfactorily, using the term "Chavínoid styles," which imposes limits on their supposed unity and at the same time definitely establishes their similarity in technique and conception.

Because of their relations to one another, the archaeological strata observed in the excavations give evidence that the Chavínoid group antedated all other artistic manifestations in Peru. One of the more salient and constant characteristics of the style — along with the obsessive predilection for serpents' heads with long rigid necks and coiled bodies, sometimes (though rarely) twisted — is the sharply defined form of the eyetooth of a carnivore and even of an eyetooth juxtaposed with a lower canine tooth, leaving a gap between them, rendered in an accomplished style. Both these characteristics are discussed in greater detail in the section on sculpture.

The typical Cupisnique vase, in the shape of a globe or a rather squat cylinder, is notable for its variously formed stirrup handles. These vases are always monochrome and vary from lead gray to light brown, dark brown, almost black, red, or even cream color.

Many pieces are modeled in two planes, indented and projected, and the contrast is sometimes accentuated by scratching, hatching, or stippling the indented surface in order to roughen it. The impressions were made by "combing" the surface with a scraper while the slip on the outside was still slightly damp. The shape of a human face, always highly stylized, is sometimes found on the body of the vase, but there are also occasional representations of a naked body or a baleful animal-like head. In an altogether different spirit is the intricately formed vase with a stirrup handle. Its round part is neatly divided into lateral halves by a vertical plane (PL. 175); on one half is a rather zoomorphic human face, realistically drawn, and on the other a face highly stylized in the manner of the Chavín reliefs, with the classic juxtaposition of the finely pointed canine teeth.

The most striking characteristics of the Salinar style, which came later than the Cupisnique and forms a link with the Mochica, are greater diversity in the form of the vase and the increasing tendency to make use of human or animal figures that are no longer composed of lines and symbols but completely modeled in relief, although in an imperfect and rather childish way. These figures, which look like statuettes, represent women as well as men in a great variety of attitudes and sometimes even erotic poses; many more examples, done with greater technical mastery, occur during the Mochica epoch. Except for the headgear, which is the same for both sexes, the body is nude,

and the artist depicts the genitals with careful accuracy, often with conspicuous intent. The human and animal forms are less well executed than those of birds (owls and parrots). The inspiration is completely naturalistic, but the artist is unable to follow faithfully and effectively the canons of the new style.

Larco Hoyle claims that Salinar clay modeling was more carefully executed than Cupisnique and that in most cases the firing was done in the open; however, this technical refinement does little to offset the poorer artistic quality of the work. In the Salinar phase there also appears a type of pottery that is further developed during the Mochica period: the hut urn, which was exquisitely designed and modeled from the very beginning, including the house with a lean-to roof and a lintel in front supported by a truncated column, and the house with a circular plan. The hut urn represents the apogee of the Salinar style. There are also vases incised with geometric decoration and divided into planes by coloring.

Virú pottery, which takes its name from the valley of its origin, near that of the Moche River, provides us with sufficient evidence to connect according to type the various phases of pottery development of the coast (Cupisnique and Mochica) with those of the Sierras (Callejón de Huaylas and Tiahuanaco). Larco Hoyle, who discovered it, maintains that the Virú was not a widely influential style but a local manner that performed an important technical service by diffusing the practice of "negative" decoration. This was done by making geometric designs on the outside of the vase after it was fired and covering them carefully with a thin layer of clay. The vase was then blackened, sometimes by smoke. The Virú vase had the same globular shape and stirrup handle as the Cupisnique, but it did not have the flat bridge of the Salinar vase or even the straight neck of the Callejón. The clay was baked in the open; hence the red or rose color of most pieces. Others had negative decoration and were usually colored black, and on one group resembling the Mochica there was spread a thin slip of cream-colored clay that suggests a transition to a later style. Virú pottery flourished in the same period as the Salinar, but it lasted until the first Mochica period.

b. Mochica style. M. Uhle was the first to characterize the Mochica style and to date it with respect to the most clearly defined pre-Inca styles. He called it "Proto-Chimu," a name that was later changed to Mochica by J. C. Tello. Mochica refers to the native nobility whose language still survives in the valley of the Moche, a more or less central district of the northern coastal area. Mochica pottery is perhaps a sort of synthesis and culmination of the phases previously described; it developed when the earlier styles had already completed their cycle along the valleys from Chicama to Nepeña. In the course of its evolution it became more dynamic, especially in the variety of its contours and shapes. The open forms include cups, some of them on pedestals, and bell vases with animated and intricate scenes decorating their wide upper borders; the closed forms include globular vessels with flattened or cubiform bellies, bottles, and in particular slightly rounded vases with stirrup handles like those earlier ones typical of the northern coast, and variants of these made to resemble fruits, vegetables, frogs, turtles, domestic and wild animals (PL. 178), and human heads. The latter represent the finest achievement of American plastic art: the portrait vase (PLS. 177, 180, 187, 193). During the course of its development the Mochica vase generally grew thinner as its size was enlarged, especially the stirrup handle, which was at first short and rather squat like the Cupisnique and then evolved into a more striking shape, taller than the vase itself, which varied ordinarily between 10 and 11 in. Negative molds, various examples of which have been preserved, were generally, if not invariably, used to make the body of the vase. The base, the handle, and the neck and mouth were affixed later. The surface of the body was covered with a fine-grained layer of clay, colored red or cream with siliceous mineral pigments and then carefully burnished with a bone tool. The firing, nearly always done in contact with oxygen, gave it a red or rose coloring. A telltale characteristic is the use of two colors (one of them always cream), so that the Mo-

chica is known as "bichrome" pottery. Later a leaden color was also employed. The decoration, sometimes in relief, generally consists of figures or of geometric motifs — serrated lines, zigzag lines, circles, meanders, and spirals. The figures on this pottery are drawn with a sure hand and show refinement of taste and a practiced mastery of design; the simple unshaded outlines of the forms are traced with fine lines in delicate brushwork, the colors ranging from red to sepia and burnt sienna. The human figures are especially remarkable for the minute particulars of their dress, weapons, and poses. The surface painting causes the contrasting planes to stand out sharply.

Characteristic of this style are the realistic scenes of ordinary life, showing large numbers of persons engaged in their daily activities, secular or religious, but more frequently in combat with monstrous creatures that look like enormous crayfish or serpents. There are countless examples of human figures transformed by great feathered wings or the tail plumage of birds or centipede bodies and equal numbers of animal figures provided with human limbs and depicted at human tasks, as well as various types of vegetables and even objects with arms and legs shown running, fighting, and wearing armor. It is a world of lesser creatures and completely inanimate things brought to life and humanized, such as appeared later in the frescoes of the Pyramid of the Moon. The pictorial scenes usually appear on the bellies of the round vases (PLS. 188, 189; FIG. 373), but there are other scenes, larger and more complicated, on the wide lips of the bell-shaped vases. In elegance and balance of design, they are all on a level of technical and artistic perfection in no way inferior to the classic decorations of Mediterranean pottery. The dynamic temperament of the Mochica artist is, according to Cossio, the product of a "dynamic" culture, in contrast to the inertia of the archaic styles. During the mature period of Mochica ceramics all the social classes were portrayed on vases. First come the warriors and chiefs of the district or city, then the priests, the artisans, the soothsayers and wizards, the messengers, the musicians, and others of all ages. Women, however, are almost never present, although the sick or maimed (e.g., the blind and persons with leprosy lips), criminals who have suffered deforming punishments, cretins, and the lascivious are portrayed individually. Such images are found among those vases that represent the human head (PL. 193) as well as among those portraying the full human figure (PLS. 176, 179, 186). The face frequently has a central section colored more lightly than the rest and two wide vertical bands across the cheeks in bright full color, representing the paint — usually red — that persons of importance actually wore on their faces. The artist is careful not to omit even the least details that would help to identify the person pictured. In the finest examples, even tattoo marks are shown. The essential characteristics of the face are revealed with an artistry far beyond merely imitative realism: it aims at capturing feelings and moods (fear, contempt, pity, irony, and others) both in the model and in the artist himself. It has been suggested that on the Peruvian coast the same system of apprenticeship obtained as that which gave rise to the art of plastic portraiture in Etruria — that is, the system of applying a mask to the face of the dead — but the dimensions of the Mochica portrait vase, which are always smaller than life size, make this completely untenable.

Mochica pottery is notable above all for its sense of volume and of plastic values, in decided contrast to Nazca pottery, which is primarily coloristic. The difference certainly cannot be attributed to lack of clays and mineral colors in the northern valleys; rather, it stems from a difference in esthetic and spiritual orientation. Among other characteristics of this art, the particular absence of the Apollonian quality has been stressed by some scholars — an incapacity to appreciate *lo hermoso y lo bonito*, or the beautiful and the elegant: "The Mochica was concerned with ugliness and disease; scenes of bloody sacrifice, torture, birth, the dance of death, and the agony of death are frequent in this pottery. The Mochica is merciless, like the Assyrian; he looks upon war, his principal occupation, with courage but without poetic enthusiasm; he satisfies his vengeance in the mutilation and slaughtering of prisoners.

Even his face reveals his cruel character, the nose like that of a bird of prey and the fierce curl of the lip" (J. C. Muelle). In fact, even the less savage scenes are dominated by a powerful and often exalted expression of force and will, or at least so it seems to us who do not know the intended significance, internal or circumstantial. The true subject of Mochica art is life, the moral and the immoral alike, in its agreeable as well as its other aspects. The crudity of sexual representations and the precise rendering of mutilation and disease are both a part of Mochica realism. It is surprising that this immense kaleidoscope of festive, menacing, vibrant, or repugnant images was destined only for the obscurity of the tomb; the fact is explained by the evident desire of these ancient peoples — as of almost all peoples, ancient and modern — to ensure a better afterlife for the dead by placing near them objects that were considered precious, as the Mochica vases undoubtedly were.

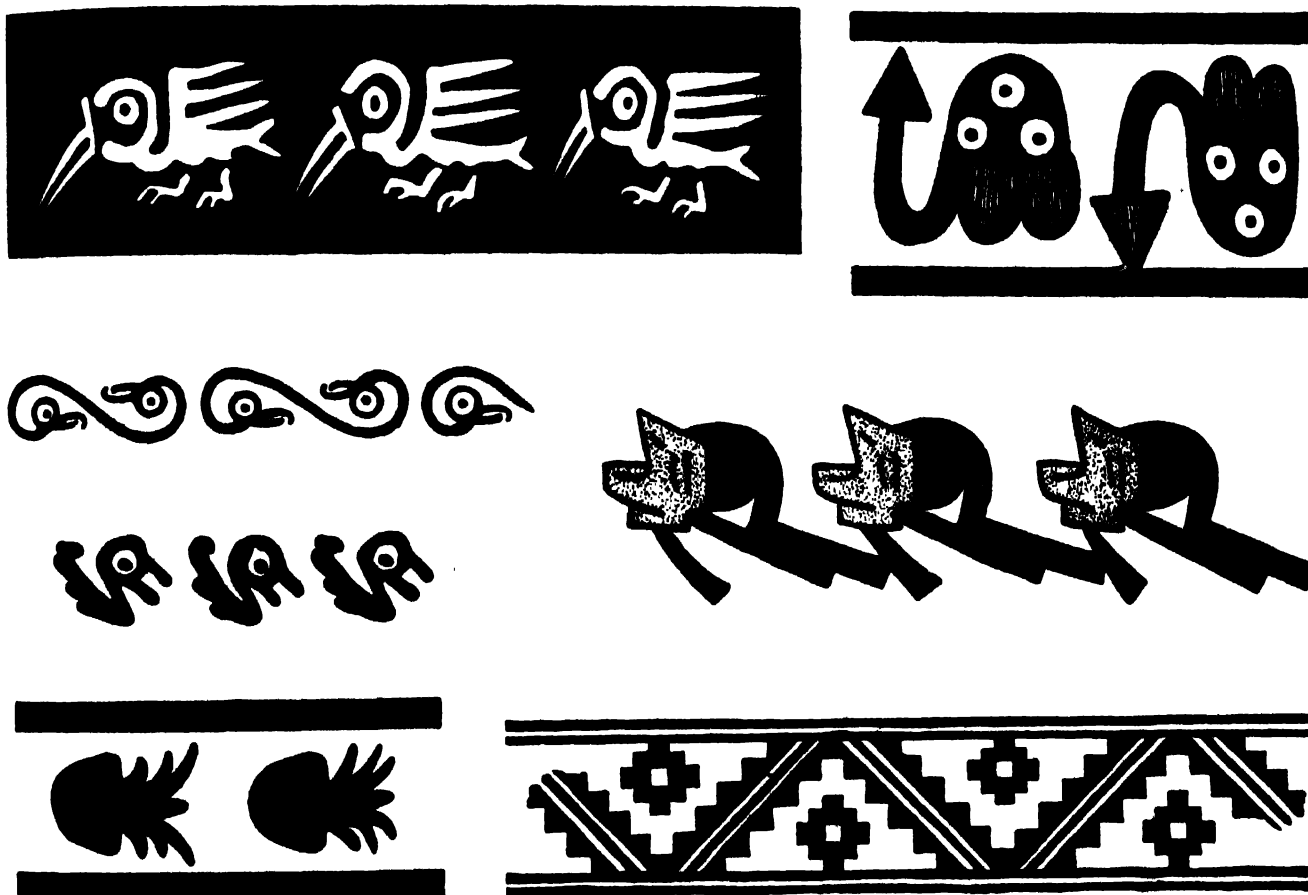
c. *Nazca style.* This ceramic style was first identified by Uhle, who called it "Proto-Nazca" and included it among the three source styles of the coast: northern, or Proto-Chimu, today called Mochica; central, or Proto-Lima; and southern, or Proto-Nazca. Taken together, these three styles constitute Uhle's "cycle of the pre-Tiahuanaco styles." The outstanding characteristic of this style is the predominance of color over all other decorative media. The Nazca style spread over an even larger area than the Mochica; in fact, if considered solely from the point of view of its method of manufacture, one must agree with Tello, who designated a geographical area of Nazca diffusion bounded by Pisco on the north and Acari on the south, with its center at the Nazca Río Grande on the coast and its mountainous frontier at the town of the Rucani. However, there is no doubt that in terms of morphological and psychological conception, its particular esthetic canon pervaded the ceramic art and even the textile art of the southern part of Peru. Because of the very fine clay, the excellent way in which it is fired, burnished, and polished, the regularity of its silhouette and bridge-shaped handle, and the thinness of its walls, the Nazca vases are some of the most perfect pieces of pottery known. According to Gayton and Kroeber, there are 25 basic forms of these vases, all molded by hand.

The great majority of Nazca vases have a spheroid body topped by two slightly divergent spouts connected by a thin, flat, horizontal bridge; the base is formed by a slight flattening of the bottom, which breaks the roundness of the vase (PLS. 190, 197). This pottery has no pedestal or formal base, and in most examples the bottom is slightly convex; specialists maintain that the vases were made in this shape so that they would stand up in sandy soil. Their dimensions do not vary greatly, the average size being about 6 to 7 in. in diameter. The decoration on the vases in rare instances is in low relief but usually is painted. Even when the potter wished to reproduce a human bust, the head of the figure is represented more by means of color than relief, and when relief is employed, the plastic effect is generally confined to the nose and coiffure and the rest is painted (PL. 191). The colors are mostly bright and luminous, although the potters did not ignore techniques that afforded paler tones and shadings; they were especially familiar with the art of color contrasts and harmonies. The basic colors, naturally all of mineral origin, are white, black, various shades of yellow, several shades of red ranging all the way to purple, and numerous grays shading into a greenish hue. Careful observers have counted 11 colors in all, of which only 8 appear simultaneously on the same vase.

The decoration on the chalice-shaped vases consists of a single band, and on the cylindrical vases a number of bands placed one above the other, usually three and sometimes even five. Only on these cylindrical specimens is there a tendency to cover the empty spaces with figures and motifs (PL. 192). However, in the globular jars and most of the other forms the decoration of the spatial areas is more sober and the "horror vacui" has yielded to subtler esthetic considerations, such as the desire to harmonize the over-all appearance and break up the monotony of the design. However, in the last phase of its development, called the "flamboyant," the wealth of motifs

and details becomes excessive. To a limited extent the decorative motifs are either geometric (e.g., broken zigzag lines, small dots at rhythmic intervals, concentric circles, meanders, small triangles shaped like arrowheads) or plaited forms (e.g., intertwined cords, nets, woven fabric textures). Yet there is an undoubted predominance of figural elements, among which can be singled out both real objects and creatures and imaginary ones. Among the first are utensils and tools, wild and cultivated plants (such as cacti, vegetables, especially the tendrils of the wild bean and capsicum and their seeds and fruits, potato tubers, and the maize plant and ear), birds (pelicans, guano birds, various parrots, humming birds, and the vulture of the region,

ures has been called "mythological" on the basis of the unprovable assumption that they represent the divinities of the ancient Chinchu peoples. A much more exact term would be "chimeric" figures, or figures that can be broken down into human and animal elements, especially those of creatures belonging to the lower levels of the zoological scale. The predominant human element is an oval or polygonal mask in which the features of the face are expressed by the most conventional means, merging with the flatness of the mask. In recompense, this physiognomical emptiness is filled by two characteristic elements that dominate in terms of size, color, and sometimes relief and create the expression peculiar to these



Decorative motifs of Andean pottery. Left, top to bottom. Nazca; Mochica; Ica; Nazca. Right, top to bottom. Nazca; Nazca; Ica.

or *gallinazo*), fish, mollusks, snakes, crustaceans, a few rare mammals, and, finally and above all, man (PLS. 190, 197). The prevailing decorative function of these images is demonstrated by the fact that they are repeated one after the other without variation and often form a long symmetrical file encircling the vase at a certain height. At other times these outlined images are repeated rhythmically in the space to be decorated and painted in contrasting colors that vary from point to point, thus displaying the wide chromatic range at the craftsman's command. The Nazca potter shows a preference for these repetitions of a single motif arranged in the form of a frieze. Among the designs most often employed are those composed of detached human heads, mummified and shrunken like the *tsantsas* of the Jivaro tribes of Ecuador, showing the long, loose mane of hair, the braided cotton cord from which the head is hung, and the closed, sewn-up lips.

In general, the human figure is imperfectly and carelessly represented. Much more frequent are images of imaginary beings of a composite character which, as the stylistic phases develop, tend progressively to become an inextricable labyrinth of highly conventionalized limb elements. This group of fig-

ures has been called "mythological" on the basis of the unprovable assumption that they represent the divinities of the ancient Chinchu peoples. A much more exact term would be "chimeric" figures, or figures that can be broken down into human and animal elements, especially those of creatures belonging to the lower levels of the zoological scale. The predominant human element is an oval or polygonal mask in which the features of the face are expressed by the most conventional means, merging with the flatness of the mask. In recompense, this physiognomical emptiness is filled by two characteristic elements that dominate in terms of size, color, and sometimes relief and create the expression peculiar to these

mask: a pointed tongue protruding between slitlike lips (sometimes also branched and ramified) and two very strange appendages in the shape of monstrously enlarged mustaches streaming from either side of the mouth toward the temples or across the cheeks, with bristles so large that they resemble tentacles and often even have the hooklike form of tentacles (PL. 204). When this mask is combined with a partially anthropomorphic body, the figure carries in one hand a scepter and in the other a trophy head of the *tsantsa* type, and the hands usually have only four fingers.

Despite its theriomorphic characteristics and the conflicting interpretations that these have suggested to specialists, the composite figure on Nazca pottery is essentially a human one, as can readily be seen in the less sophisticated examples. However, it does not represent an ordinary man but a mythical, anthropomorphized being whose supernatural power is concentrated in the mask and in the classic Gorgonlike features that express its aggressiveness.

The darkest mystery concerning Nazca ceramics is their lack of antecedents; in fact, the style first appears fully mature, apparently without rudimentary specimens or experiments. Tello

thought he had solved this problem by creating his "Pre-Nazca" style, using the specimens that Kroeber gathered together under the designation "Nazca B": these are mostly rather tall vases, cylindrical or chalice-shaped, characterized by a completely white surface with consecutive horizontal bands to fill the empty spaces. The figures are distinguished from the other Nazca phases by the fact that they attain the highest degree of complexity and stylization: the mustaches have become innumerable tentacles and hooks, and the human elements are almost unrecognizable. Tello's solution of the problem is unacceptable for many reasons, not excluding the purely stylistic one. It is therefore advisable to maintain the sequence indicated by Kroeber (1927) and to place the examples of so-called "Pre-Nazca" in the final rather than in the initial phase.

d. Paracas styles (Cavernas and Necropolis). In the pottery of Paracas, certainly related to that of Nazca, two completely different groups can be distinguished. These groups correspond to the two archaeological sites of this locality, which were discovered in 1925 by Tello, who named them "Cavernas" and "Necropolis."

The archaeological site called "Cavernas" comprises more than fifty subterranean rooms dug into the hard, rocky terrain of the Cerro Colorado, opposite the small peninsula of Pisco and 15 miles from the port of Pisco. The ceramics found in these tombs are made of blackened clay tempered with sand; the prevailing form is globular, with two spouts joined by a flat bridge, as in Nazca ware. Shapes imitating natural forms occur frequently, particularly gourd shapes. There are also bowls with almost vertical rims. Inexpertly fashioned human figures or human heads are superimposed on the vases and often provide a support for the end of the handle. Generally the decoration occupies the upper two-thirds of the belly of the globular vase and sometimes is composed of a simple ring running around its neck. This characteristic decoration, in addition to the convex base on virtually all pieces, gives this pottery a notable resemblance to Nazca ceramics. At the same time, two types of Cavernas pottery can be distinguished, the first perfectly spheroid, like Nazca pottery, and the second considerably flattened. There are also two decorative styles: one is geometric and approaches the flowery style of the last phase of the Chíncha region (Ica style), and the other is incised in firm, simple lines and retains the general expression and certain motifs of the Chavín style, especially in the outline of the sharp canine teeth. The spheroid vases frequently occur in the first style and the vases with flattened bodies in the second. The most striking feature of this decoration is that the colored relief was applied after firing, covering the spaces remaining between the incised lines with a resinous paste mixed with brightly colored substances, among which Muelle has counted the following colors: Prussian and ultramarine blue, cadmium and chrome green, cadmium yellow, orange, carmine red and ochre, and several shades of brown and white.

The site called "Necropolis" is located a little less than a mile from Cavernas, on the northern slope of the rocky peninsula of Pisco. Necropolis ware, of relatively small dimensions, is made of clay externally of a whitish hue tending to ivory and has amazingly thin walls. The forms are generally somewhat flattened, particularly those which imitate the shapes of vegetables, for example, squashes. There are also plates and vases modeled in the general shape of animals, or surmounted by heads of animals, especially birds, and human beings, on which rests one end of the handle, which is usually of the same form as in Nazca ware. The two tubes forming the spouts are perhaps a trifle taller and thinner than those of Nazca ware. Kroeber classifies this pottery as an offshoot of the Nazca style which, particularly in the decoration of the belly of the vase, has evolved in its own peculiar way.

After his fortunate discovery of the Paracas archaeological sites, Tello established the following stylistic and chronological sequence: (1) pottery of the Cerro Colorado, called Cavernas; (2) pottery of the Necropolis (Cavernas and Necropolis together constitute the "Pre-Nazca" style); and (3) Nazca pottery, which originated directly from within the Necropolis style.

Some of the Paracas vases are of exceptionally fine paste, with very thin walls not more than 1/6 in. thick and, despite the height of 7 3/4 to 9 3/4 in., weighing not more than 3 or 4 oz. One such vase represents a neckless male head, widened out toward the bottom and standing on a flattened base, the receding forehead and the temples converging at the pear-shaped top. The open mouth, which usually displays 16 identical teeth, and the ear, a double spiral in relief, are both drawn conventionally; but the large, curved, aquiline nose with flaring nostrils and the widely staring, slanted eyes have a sharply realistic character (PL. 204). The surface is monochrome covered with a greenish resinous material which, in addition to the thin walls recalling the cups of the Arretine ware, apparently represents Paracas's most delicate manufacture.

e. Tiahuanaco style. Tiahuanaco is the name given to an archaeological site located in Bolivia south of Lake Titicaca, a short distance from La Paz and at the center of the territory occupied by the ancient Colla peoples, who spoke the Aymara language. As Bennett observes, this name has sometimes been used by historians and archaeologists as a simple designation for the area in which the ruins are found, at other times as a label for the architectural and pottery style, and at yet others as the name for the chronological period in which the potters and the builders of the now-ruined structures flourished. The name Tiahuanaco is usually applied both to the pottery found on the site and to those pieces from other sites which in certain respects resemble the images of the Tiahuanaco stone reliefs. Thus it is worth while to distinguish these two styles as "Tiahuanacoid."

In Tiahuanaco pottery two styles, stratigraphically superimposed, have been recognized, but there is no evident genetic relationship between them, such as has been demonstrated between Nazca and Ica in the Chíncha region. For these two styles Bennett employs the terms "Early Tiahuanaco" and "Classic Tiahuanaco," but these two terms imply a genetic relationship, whereas the working of the clay, the forms of the pottery, and even the decoration of the first style do not display any early or primitive characteristics. It is therefore advisable to use the terms "Tiahuanaco A" and "Tiahuanaco B," if those proposed by Posnansky, "Tiahuanaco I" and "Tiahuanaco II," are to be avoided because of their reference to stone sculpture and architecture.

Tiahuanaco A is made of good clay, finely worked and carefully fired, and tempered with sand and sometimes with mica, but its surface polishing is inadequate. The vases were shaped by hand, but the potter may have used molds in making the relief elements attached to it (usually heads and human and animal faces). The great majority are open forms (90 per cent, according to Bennett), such as cups, plates, platters with a slightly convex base and two lateral handles, and bowls with handles. The closed forms include bottles with more or less narrow necks, though always of considerable height. A characteristic form is that of the ceremonial vase for burning incense, with a receptacle in the shape of a small but capacious cylinder which on its flared upper part, open and modeled to form an animal's body, bears on one side the tail and on the other the head of a puma with its mouth opened and menacing. The "guero" is also common, a cylindrical drinking vessel which generally has a human face in relief on one or both its sides. Variants of this type have a small base and the upper half shaped like a chalice. The color given to the terracotta is generally red, or rather an attractive pinkish tint, and at other times an earthy orange or black. For decoration, white, black, red, brown, orange, and yellow were painted directly on the clay before firing and burnishing, though with less care than in Tiahuanaco B.

The predominantly geometric motifs were incised in the clay and then filled with a coloring substance; for the most part they are straight single lines, double zigzag lines, or step designs of three or more steps filled with different colors.

The figural designs are chiefly images of the puma, the condor, and highly stylized birds and snakes. Next in importance come the human faces and figures that recall the perspec-

tive convention of Tiahuanaco's famous relief: the torso seen frontally, the legs, arms, and head seen in profile, and the hands grasping poles resembling scepters, often with trophy heads impaled upon them. Tiahuanaco A was discovered, more often in fragments than entire vases, on the lower level of the archaeological field of Tiahuanaco and on the islands of Lake Titicaca, particularly the Isle of the Sun. More recently it has also been found on the edges of the small peninsula of Copacabana.

Tiahuanaco B (Bennett's "Classic Tiahuanaco") is more extensively distributed, having been found over almost all the Bolivian highland and the southern part of the Peruvian mountains. Its forms are somewhat more numerous than those of Tiahuanaco A; the cups and bottles have handles, spouts, and a larger decorated surface. Like Tiahuanaco A, it has incised linear decoration and a proliferation of small patches of color, but in a more complicated form. There are more stylized images in the figural decorations: snakes with almost human or feline heads, heads of men or of pumas in profile, warriors viewed frontally with their usual distinctive attributes, and the puma in profile with its tail turned up and its nose drawn in the form of a circle. The nose, eyes, and nails or claws of these figures are heavily outlined in black. Characteristic of this style is the eye with an angular appendage on its lower part (the "winged eye" described by archaeologists). These designs tend to separate and break down into many-colored fragmentary motifs, which, in the following period, even cover the human or animal figure, producing (on the cheeks, forehead, and chin, for example) an unexpected mosaic of geometric chromatic patches which resembles the patterns of oriental rugs.

The pottery of the locality of Pucara, north of Titicaca and near Puno, also shows the Tiahuanaco influence, although it is mostly fragmentary. South of the lake, however, a much shorter distance from Tiahuanaco, the pottery of Chiripa seems in many respects independent. This pottery had an unusually long life span. Having developed in a period apparently contemporaneous with that of Mochica and Callejón, it continued throughout the phase of the diffusion of the Tiahuanacoid style, which expanded over virtually all Peru, constituting the first of the pan-Peruvian influences. But whereas the relations of Tiahuanaco A and B with the Chavinoid, Huaylas, and Mochica creations are dimly recognizable, the origin of the last Tiahuanacoid phases ("Derived Tiahuanaco," "Decadent Tiahuanaco," and "Coast Tiahuanaco," in Bennett's terminology) still remains obscure. This is true chiefly of the interrelations between pottery, sculpture, and textiles, and this problem will probably persist until light is shed on their relationships to the other styles of this vast territory, particularly those that flourished on the southern coast from Lurin to Moquegua.

f. *Callejón de Huaylas (or Recuay) style.* The name "Huaylas corridor" is given to the elongated quadrilateral which is bordered on the west by the Black Cordillera, on the east by the White Cordillera, and on the north and south by transverse mountain ranges, along which the Santa River flows, and in which the mining center of Recuay is located.

Stratigraphic studies have led to the assertion that the pottery of this region belongs to a remote epoch contemporary with the styles of Tiahuanaco, Mochica, and Late Nazca. Some of its important features influenced the styles of the Sierras and especially those of the coast, though it has not yet been possible to establish a real dependence of Recuay on Chavin even if Chavin de Huántar is not more than 19 miles away as the crow flies, or on any other styles.

The first scholar to describe Recuay ceramics, J. C. Tello, singled out two types of pottery. The first, the rustic, made of ordinary clay, has thick walls and is red in color or blackish, due to firing under poor draft conditions, and unpolished. It is made up mostly of pieces for everyday use, among which there are four typical forms called *kushuma*, *purucha*, *puto*, and *racacha*, all names derived from the indigenous words for various natural forms of the squash and a tuberous root. The *racacha* form usually has three more or less crudely ta-

pered clay supports attached to its convex bottom, which transform it into a rough, three-legged vase for everyday use.

The second type identified by Tello includes truly artistic pieces. The appearance of the clay is in itself enough to distinguish it, for it is finely grained and of a white kaolin color, although there are red, gray, and black specimens. The walls are thick and sturdy. In the ornamentation the natural color of the clay is used if it is white; otherwise the surface is covered with a uniform whitish pigment. The decoration is obtained by the negative painting method, using brown and burnt sienna. Although this technique has been observed elsewhere, especially where the Virú style prevailed (Gallinazo), no other locality has achieved effects comparable to those of the ceramics of Callejón. Kroeber notes that only in this region was negative painting completed by small retouchings of positive red painting, and he suggests that it was precisely the high degree of development achieved in Callejón by the negative technique which determined the preference for linear depiction of the limbs and organs and the dislike for three-dimensional areas and figures.

Recuay's most important and best-known creation is the highly stylized and linear figure of a composite being vaguely resembling a carnivore, which is shown sitting on its hind-quarters, springing forward, or recumbent. It has a long tail, very sharp claws, an elongated, doglike head shown in profile with sharp teeth, and a reptilian appendage of exaggerated length beginning at the neck, curving backward, and sometimes forked. The triangular ear and the great staring eyes, expressed geometrically by a double circle, are the only organs not treated completely unrealistically. This figure has often been said to represent a dragon, but there is no evidence for this theory. These images, always small and drawn in bright lines that stand out against a dark background, are never ends in themselves; they fulfill, in fact, a secondary decorative function, since they are framed in an oblong enclosed by thick lines and form a kind of decorative panel on the belly of the most refined pottery.

The forms of Recuay ceramics (PL. 195) include specimens of rather small size with various kinds of spouts; some have stirrup handles, as in the Mochica style, and others bridge-shaped, as in the Nazca style. The predominant form, however, is a simple tube of relatively broad diameter which flares outward at the end. Above the globular part Recuay vases generally have figures modeled in full relief, which are expressive though rather crudely executed. The central figure is usually larger and is surrounded by other minor figures placed so as to form various units: a priest leading a llama, a second priest encircled by a number of women paying homage to him, a terraced sanctuary in whose wall are affixed carved human heads, above which in turn are statues. Another type of vase has the form of a human, though without the Mochica potters' mastery of portraiture. The legs, barely sketched in, are crossed or held apart, and the vase's cylindrical spout rises from the shoulders.

g. *First pan-Peruvian phase: Tiahuanacoid, or Andino.* The first expansion of pan-Peruvian artistic influences had as its line of communication the plateau between the eastern and western cordilleras of the Andes and its lateral ramifications, which give access to the bottoms. Uhle named this phenomenon first "epigonal" and then "mixed"; Kroeber employed the adjective Tiahuanacoid, which certainly is appropriate, since it indicates formal, rather than genetic, relationships. Bennett, however, adopted the term "Coast Tiahuanaco" (which he divided into phases A and B) for the coastal valleys and used "Wilkawain Tiahuanaco" and "Derived Tiahuanaco" for the northern and southern sections of the Sierras, respectively. Tello has made current the term "Andino," which Peruvian archaeologists now subdivide into Andino of the north, the center, and the south. Muelle has joined together the last two sectors, which admittedly show signs of parallel development; yet within this group he distinguishes the Nazca-Ica-Ancón-Pachácamac complex from that of the Nievería site, pointing out that the geographical factor is less important than formal

characteristics, since Ancón, for example, though located in the north, is closer in style to the southern site of Ica than to the central site of Nievería.

Except for Nazca, all the sites have produced examples of vases that are crudely made with thick walls of paste that is very little worked. In general the dimensions are large, the height being more than 23 in. There are vases with flat bases, cylindrical and chalice-shaped forms, cups, spheroid ollas with flat or rounded bases, globular vessels with two conical spouts, and many other types. Peculiar to this style is the large vase with a spheroid belly and a flat or convex base, the body decorated with the garments and sometimes the hands of an anthropomorphic figure, and the neck modeled rather realistically in the form of a human face. Coupled vases are not infrequent (joined below by a bar and above by a flat bridge), one a complete modeled and painted figure and the other a bottle. Especially rich in painted decoration are the Nazca and Pachacamac specimens, which, for their external burnishing and the brilliance of their colors, are considered the finest pieces. After these come the figures in full relief and large dimensions representing men and animals, such as the very beautiful llama from the Pacheco cemetery near Nazca, realistically modeled and painted white and brown. The position of the head, almost as though sniffing the air, the erect, alert ears, and the large, luminous eyes testify to an art that has attained perfection (PL. 196). Apparently these were not used as receptacles; yet on the heads of the men and the backs of the animals depicted the potters continued to attach a spout resting on a roughly cylindrical tube decorated with geometric motifs. The decoration follows local styles, though the characteristic motifs of Tiahuanaco are also accepted. A constant characteristic of this style is the gaping human mouth with an abnormal number of teeth in a double row, the symmetry of which is broken at both corners by two triangular canines. In several elegant cups, profusely decorated with painted figures, there reappears the frontally viewed image that dominates the famous Tiahuanaco frieze (PL. 199): a warrior dressed in an ample tunic with several trophy heads attached to his belt, clasping in his hands two scepters decorated with mythological figures.

From the cemetery of Nievería, which was mentioned in connection with the funerary pyramids, Uhle took a large quantity of pottery which he calls Proto-Lima, classifying it together with the group of the pre-Tiahuanaco civilizations. However, these pieces should be placed in a less remote epoch, since in both technique and form they combine Mochica and Nazca with Tiahuanacoid elements. It is possible that they do not form an organic whole but rather constitute a mixture of heterogeneous productions; in fact, alongside coarse, unpolished specimens in red clay there are a smaller number of fine examples of pottery made of bright, natural-colored orange clay with a smooth, burnished surface. Both the painted geometric decoration and the full-figure relief show a preference for simple designs covering small areas.

In the northern Andino style the human head is crudely modeled on the neck of the vase but not on its upper part, which is shaped like a headdress (*montera*). The painting, however, brings greater clarity to this design. Heads of birds and carnivores are also found. Although this pottery has many of the qualities of advanced ceramic art, the modeling is poor. The vases are generally not more than 4 in. high. The globular and lenticular forms have convex bases. The painted designs are outlined in black, which throws the more subdued hues of white and gray into relief against an orange background.

h. Southern Confederation: Ica-Chincha style. During a period that must logically be placed after the first pan-Peruvian phase, there appeared along the coast signs of the degeneration of Andean art. At the same time there were indications of an increasingly vigorous upsurge of local activity that eventually constituted a "new" style in the sense that, although traces of former influences remained, the original local inspiration was revived and assimilated with outside influences and modes. This revival of local coastal art is definitely related to the establishment there of new autocratic or confederated states, whose

institutional characteristics are, however, little known. Two artistic centers stand out prominently in this period of the revival of pottery making: Ica, in the confederation of South Chincha, and the centers of the Moche and Chicama Valleys and their environs, in the northern coastal state called Gran Chimú, from which products traveled a great distance. With regard to southern pottery, problems of terminology become even more difficult than elsewhere. The name "Ica," in a geographic rather than a stylistic sense, has led to the use of such terms as "Early Ica," "Middle Ica," and "Late Ica," although the first of these periods (with half of the second) is nothing more than the Tiahuanacoid style as it occurs in that locality (already called "Epigonal" by Uhle), and the second half of the third period ("Late Ica II") constitutes a stage already influenced by Cuzco.

Muelle distinguishes in the Ica-Chincha style an early and a later period, the later period finally merging with the contemporary style of Cuzco, or Inca. Ica pottery gives evidence of having attained greater development and consistency of style than that of Chincha, examples of which have been exhumed from the Chincha necropolis on the Río San Juan.

The paste generally used in the Ica pottery is fine, well worked, and red in color after figuring. In the last phase of the later period there appear vases of black clay which definitely prove the penetration into this region of the technique and method of production of the northern coast. For the most part, Ica forms are open ones: cups and handleless bowls with sloping or vertical walls decorated more or less profusely on the outside and provided with one or two holes near the rim to permit hanging. The closed forms are globular, barrel-shaped, in the form of a truncated cone, or bottle-shaped, the last type having a lateral handle and long neck.

The peculiarity of this style lies in its decoration, which is painted and always somewhat geometric. There is an abundance of broken lines, zigzags, step frets, meanders intertwined with step frets, triangles, and circles. All these motifs are small and repeated rhythmically in single or double rows forming parallel bands. In the most flourishing phase of this style, the horizontal band, which has become wider on the belly of the olla or bottle, is subdivided into vertical quadrilaterals and thus produces an effect similar to the design on a Persian carpet. One also finds bands with rows of birds and other creatures. The few colors employed — white and black, less often gray and Nazca purple — were obtained from minerals and applied before firing. The contrasting effect of the minuscule pattern areas gives evidence that the artistic expression of the region grew out of the experience and techniques of weaving.

i. Chimú style. The new phase of the ceramic arts of the northern Peruvian coastal valleys has been at various times named "Chimu II" or "Late Chimú" (Uhle, Bennett), "Tallán" (Tello), and "Imperial Art" (Larco Hoyle). But since the designation "Mochica" has decidedly prevailed for the first phase (instead of "Proto-Chimu" or similar names), the last phase can surely be called Chimú without any danger of confusion. The region over which this type of pottery was distributed is a large one, extending from Piura in the north to Casma in the south, its chief center being in the Moche Valley. The distinguishing characteristic of this pottery (PLs. 200-202) is the uniform black or lead-gray color of the clay used in almost all the vases (80 per cent, according to Kroeber), which has suggested the term "black bucchero." Only a few vases have the red color of terra cotta or are covered by a thin, cream-colored slip. The paste used is not always smooth, but as a result of careful burnishing the surface is metallic-hued, shiny, and brilliant. The Chimú shapes are extremely varied: they include open forms, closed forms, and twin forms. Among the twin forms are a great many of the "whistling" jars described by Wilson. These consist of an ordinary bottle whose belly is joined to a twin jar most often realistically modeled to represent a bird; when the inside air is blown out, special devices at the point of junction of the two vessels and also in the neck of the bird produce a kind of whistle imitating the bird's song. The handles in this pottery assume varied forms: they may be stirrup-shaped with

a small animal modeled in relief (most frequently a monkey), or they may resemble two beaks with a connecting bridge, one end of which often rests on a modeled figure. The original character of this style is due to its "statuary" decoration, which is composed of figures in the round attached to the upper part of the vase and most often forming a unit with the handle. However, the belly of the vase may carry another kind of decoration in low relief made up of human figures, animals, plants, or geometric motifs (zigzags, circles, spirals). These mold-made geometric motifs are somewhat raised above the ground, which for greater contrast is decorated with very small stippled dots resembling goose flesh. The subjects are quite varied: plants, animals, and, most frequently, men. The Chimú potter continued to perfect the art of portraiture; but there remained an immense difference between Chimú's sketchy, imprecise execution and the clarity of Mochica ceramics. A vast number of statuettes give evidence of interest in the expression of movement: every conceivable attitude of the human body is represented in figurines that are at times naïve, at times humorous and even obscene. Unquestionably Chimú art is the continuation, or rather the resumption, of the old Mochica tradition, for it came into being in the same region and was the creation of the same people, who had undergone, during the preceding period (Pan-Peruvian I), the domination of the Andino and Tiahuanacoid styles and who were soon to be affected by the new influences (Pan-Peruvian II) resulting from the increasing contact with the contemporaneous civilization of Cuzco. The feeling for volume and the preference for a single color, as well as the desire for realism, were inherited from Mochica.

j. Chancay style. Among the many minor varieties of pottery of the coast, two should be mentioned: the examples exhumed from the tombs of Ancón (the later phase) and of Chancay, both slightly north of Lima. Black painting on a whitish background is characteristic of this work. The orange-colored clay, not very fine and rather porous, is covered by a thin, greenish-white slip. The reliefs on the walls are done not with a mold but with a spatula. Typical of this pottery is a rather long, egg-shaped vessel, which generally carries affixed to its neck a human head crudely executed, the nose and ears in simple relief and the eyes and mouth painted; the arms and legs, crossed over the chest and stomach, are barely sketched in with black paint, and the hands clasp a small vessel in relief, probably a ceremonial vase. In these sketchy human figures the head, often covered by a cap, is greatly flattened at the forehead and occiput (cranial deformation). On the face appear tattoos in black. Despite crudeness of execution, the general effect is haunting (PL. 207). This style remained alive throughout the period immediately preceding the Inca invasion of the coast and, indeed, partly survived it.

k. Cuzco ceramics (Inca style). Both the central coastal confederations and the state of Gran Chimú in the south and north had to yield before the vital thrust of the people of Cuzco, the coastal confederations as a result of a military invasion and the state of Gran Chimú because of an "alliance" that was gradually transformed into outright domination. The ceramic styles provide a rather faithful picture of the modifications in esthetic orientation and methods of production which were effected as a consequence of Inca hegemony. The transformation did not take place all at once; in fact, it encountered resistance that varied in kind from one locality to another. For example, in the northern sector of the coast there was at first a mixture of styles and then gradual Inca predominance, though without the total disappearance of Chimú characteristics.

Inca pottery both in forms and decoration is so sharply differentiated from all others that it is very easy to recognize wherever found. Its area of diffusion covers all the regions that were part of the Tahuantinsuyu during the period of its greatest splendor and also embraces such areas as northern Chile and Argentina, where the Inca populations did not succeed in settling permanently.

The paste used in this pottery is fine and well worked and fired; each piece is perfectly shaped. The technical skill of these

pottery enabled them to create, in addition to miniature vases, vessels so large that one man cannot lift them. The forms are both open (cups, platters, flared pitchers, a plate with two animal muzzles at either end) and closed (ollas, bottles, and water jars). The first group includes a ceremonial object, the *pakhcha*, often made also of wood, having a zigzag canal through which the liquid runs down into the mouth of the celebrant. In the second group is the so-called "aryballus" (PL. 208), which is so characteristic of Inca civilization that the presence of one of these vases or even a fragment of one attests to the penetration of the region by the people of Cuzco.

In the typical Inca aryballus the neck is one-third the height of the vase; the lip is everted and has on its sides two small rings; the widest part of the body is located quite low on the vase, and from this point to the shoulder the size decreases in a harmonious curve. Two short, flat handles are attached to the sides at the widest part of the vase, and the body, lacking any sort of base or pedestal, terminates in the shape of an inverted cone. The vase is decorated with painting on only one side, or, if on both sides, with greater care on a single face. A tiny, sketchily modeled puma head makes a knob at the shoulder; figural material from the Chimú region proves that this protuberance was used to secure a cord which was run through the two lateral handles to permit bearers to carry the aryballus on their shoulders. It is essentially a vase without a base, intended to be placed upright in the earth or sand. The vases called "aryballoid," though closely akin to the first type, have a flat base or a neck with the feature of a human face on one side. Lateral handles are always present.

Inca decoration is easy to recognize because it combines a rather sober color scheme and a preference for simple, small motifs. In themselves, the decorative motifs have no importance; they include such geometric designs as small alternating triangles, zigzags, meanders, lozenges, circles, spirals, and fringes of various colors, and also small representations of such plants and animals as butterflies, flowers, dragonflies, and fishes arranged on the field with order and balance. Besides the white, black, and red used in these motifs we find yellow, orange, and red as background colors, applied with delicacy and never in strident tones.

The production of pottery in this style did not cease with the arrival of the Europeans. There was a brief intermediate period in which shapes and decoration gradually degenerated while the paste became more refined, the vases being coated on the inside with white kaolin and glazed on the outside with light green, yellow, or brown. Later, the technique already introduced into Spain by the Arabs gained the upper hand, and the period of the Andean people's artistic activity came to an end.

SCULPTURE AND PAINTING. The accepted subdivisions of artistic activities that recur in all treatises appear unsuitably rigid when applied to the art of the Andean peoples, for it is specially in their pottery that they concentrated their artistic sensibility in reproducing objects, living things, and the human physiognomy. In no other case has sculpture been so completely absorbed into modeling. We do not think of the Mochica portraits, whether modeled or painted, as pieces of pottery; indeed, the possibility of their serving a practical purpose seems as remote as for the decorated and inscribed amphorae of Attica and Etruria. With regard to Mochica pottery, we think rather of the plastic values achieved and of the artistry of the maker, who was in fact a sculptor, not a potter.

Colombian stone sculpture. Most of the Andean sculpture in stone comes from Colombia and is known as the "art of San Agustín" (PL. 165). San Agustín, situated in a narrow valley at an altitude of about 5,000 ft. and at the confluence of the Sombbrero and Upper Magdalena Rivers, is the small village in which the first statues were found; but today the name is used to designate an entire group of about 300 statues discovered in a broad wedge-shaped area of more than 300 square miles, situated where the Cordillera Central and the Cordillera Oriental divide.

Until quite recently, the region was almost inaccessible; nevertheless it was visited by several explorers: first the Italian cartographer Agostino Codazzi (1857), followed by the Colombian Carlos Cuervo Márquez (1893), the German archaeologist K. T. Preuss (1913-14), and the Spaniard José Pérez de Barradas (1935), who extended his investigations into the region of Tierradentro. More recent evidence points to a diffusion of the art of San Agustín in an area embracing the entire Upper Magdalena, the valley of La Plata, the outskirts of Popayán, the Department of Nariño, and the Upper Cauquetá; however, this expansion took place only in the declining period of San Agustín art. The most famous, one might even say classic, centers for this sculpture are the localities of San Agustín and Uyumbe; in both places the Colombian government has recently established archaeological parks in which several statues are assembled and special roofings have been erected to protect the entrances to the subterranean temple tombs. The statues, which were discovered in the area, are carved out of blocks of more or less hard volcanic stone (dacite, basalt, andesite) and give a general impression of gigantic proportions; yet one can distinguish three separate groups in terms of size: the first group consists of pieces less than 4 ft. in height, and the second and third groups have an average height of 4½ ft. and 8 ft., respectively. In the majority of these statues, the features are distorted into a menacing conventional mask with monstrous features: the half-opened mouth reveals two rows of gnashing teeth and, most prominently, two sharp canine teeth at the sides. In some examples a tongue protrudes from the mouth, ending at times in a small head. However, a more literal naturalism (if one can speak of naturalism in such highly stylized sculptures), is encountered in the features of the "alter ego." This is a being which, in a good number of the statues, is placed above the principal figure; its head appears directly above that of the person depicted, and it sometimes has arms and legs as well. This representation is linked with analogous well-known types in the statuary of Central America (the island of Zapatero in Nicaragua) and expresses the idea of protection-possession, or the source from which every individual magically draws his energy. These stone figures once stood on either side of the entrances to the underground temple tombs, supporting the stone beams that held up the earth forming the roof, or were placed at the back of the temple tomb to represent the deified demoniac being. Their importance is historic rather than esthetic, for they reveal subtle and tenacious ties on the one hand to Middle American productions and on the other to the region of the central Andes: the teeth in these statues are handled in much the same way as those in the calligraphic designs of Callejón de Huaylas and Tiahuanaco; the figure treatment is similar to that of the female bodies with accentuated hips in the reliefs of Manabí, Ecuador; the scepters, poles, and clubs are like those brandished by the figures of Tiahuanaco; the gnashing teeth suggest Chavín de Huántar; and the protruding, often articulated tongue resembles Nazca.

The art of Callejón de Huaylas (Peru) and Manabí (Ecuador). In the Department of Ancash in Peru about three hundred human figures of stone of varying dimensions (from 1½ to 4½ ft.) were discovered and placed in the Museo Regional Arqueológico de Ancash, Huarás (Callejón de Huaylas). There is a striking contrast in these statues between the extreme crudity of execution and the abundance of weapons and personal ornaments, such as headdresses and necklaces. They parallel, in fact surpass in excess of decoration and casual workmanship, the yields of the San Agustín region: the same crudeness, the same disproportion between the enormous head and the rest of the body, and the same poses of the arms and legs. But the female figures, seated with their legs spread apart, give evidence of a less vague and generic kinship with those of the province of Manabí in Ecuador. In fact, it is evident that in both Ecuador and Callejón the general scheme of the figures is based on San Agustín models. Furthermore, these female figures fall into a special category, because, being cut out of slabs, they are steles and differ from the figures that more closely resemble statues; first the image is outlined in graffito, and

then the surrounding stone is cut away to a lower level. This same technique is used for the female figures of Manabí, San Agustín, and Callejón de Huaylas.

In short, it seems clear that there are tenuous formal, technical, and psychological connections among the works of these crude sculptors.

Monoliths of Chavín. It is, however, surprising that at a short distance from Callejón, in Chavín de Huántar, valuable sculptures were produced that show no resemblance to those in the museum at Huarás, not only because they display a much greater technical mastery but also because of the highly individual style that distinguishes them. Until 1919 only a single monument in this archaeological area was known, the stele (PL. 167) discovered by the Italian geologist and botanist Antonio Raimondi and now in the Museo Nacional de Antropología y Arqueología at Lima. This stone, which undoubtedly fell off the outer wall of the Castillo of Chavín, is 6 ft. high and has an average breadth of 2 ft. 4 in. and a thickness of 6½ in. It is a slab of diorite with a perfectly flat, polished surface on which appears an unusual figure slightly raised above the background and carved with consummate skill and symmetry, in firm, cleanly drawn straight lines and bold, impeccably described curves; the whole composition presents one of the most elaborate designs imaginable. Originally it was thought by some to be a caricature; later it was ascribed to an obscure native cult, and an attempt was made to identify it with a number of more or less specific deities (the sun god, according to J. T. Polo, and according to others the Supreme Being); others regarded it as the totem of the Huari people. The advocates of accurate scientific terminology claimed that it was Wiraqocha, since it resembles the central figure in the frieze of Tiahuanaco, which was taken to represent Wiraqocha in person. Meanwhile, other scholars tried to discover the correct scientific classification of the animal from which the figure derived its theriomorphic elements (mention was made of the jaguar and puma as well as the buffalo, scolopendra, and frog).

The figure, which occupies the lower section of the stele, clasps in its hands (which have only three fingers, with curved, sharply pointed nails) two staffs or scepters and seems to be covered by garments reaching to its wrists and ankles; its waist is encircled by a belt that has on either side two small ribbons which, in keeping with the decorative style, are transformed into snakes. The huge head, with two staring, globular eyes, the open nostrils, the prominent, stylized ears, the mouth with its clenched teeth, and the enormous canines are unmistakable. Difficulties of interpretation begin, however, in the section directly above the figure's eyes, where there are a second pair of nostrils and two sets of fangs, both facing in the opposite direction, as can be seen if one turns the photograph upside down and examines the composition from the direction opposite to that of the human figure clasping the scepters. This method of examination, first suggested by Joyce in 1912, has made it possible to exclude as inexact and unfounded many of the interpretations mentioned earlier. The unnatural appearance of the figure, due chiefly to the placing of so disproportionate a headdress on the person depicted, loses virtually all its enigmatic character; the elaborate design turns out to be no more than the already well-known series of masks or human faces so numerous in Nazca ceramics. In the Raimondi stele five different elements are easily distinguishable, the first joined to the forehead of the figure and the rest hanging from the tongue, each one showing the tongue and fangs in a clear design.

Kroeber and Muelle concur in concluding that the Raimondi stele is not so old as was first thought but rather was created during the last phase of Proto-Nazca, an opinion that has substantially modified traditional ideas on the antecedence of the sculpture of the Sierras. As to the origin of the stele, we can now add that its conception harks back to the old San Agustín motif of the tongue with a pendent head and, in a more immediate sense, is related to the decorative style of Nazca B, although the artist has felt impelled to revive the theme of the Gorgon-like monster — already somewhat attenuated as a result of the

intervening conventional transformations — and has emphasized it by means of the sharp fang protruding through the lips.

Figures akin to that on the Raimondi stele were very probably not uncommon in Peruvian territory; a much simpler geometric figure, with its Gorgonian elements confined to the tongue, is incised on the sculpture of Pacopampa, and others appear on the several small plates of gold worked in *repoussé* found by the Galloso brothers at Chongoyape (Lambayeque). But a still closer parallel with the figure of the Raimondi stele, at least as regards the face, is presented by the so-called "Lanzón" of the Castillo at Chavín de Huántar (PL. 166). This is a monolith of granitic stone carved with singular delicacy and elegance, 15 ft. high and tapering in thickness from a few inches to over 1½ ft., and shaped to resemble a gigantic dagger or spear with its point stuck in the pavement and its handle so securely fixed in the rock that forms the ceiling of the crypt that it was impossible to detach it. The back of this enormous granite dagger corresponds to the back of the figure depicted, and the cutting edge outlines the profile of the figure's face in such a manner that the two symmetrically carved sides represent, respectively, its right- and left-hand sides. The face is the monolith's most important feature; Tello finds in it a clearly feline image, zoologically a jaguar, mythologically Wiraqocha, and allegorically the rain-thunder-lightning triad. In fact, some of the formal characteristics of the Lanzón figure are repeated in the jaguar-shaped stone vase now in the museum of the University of Pennsylvania, a picture of which Tello reproduces in support of his interpretation. The jaguar's features are undoubtedly successful in endowing the face depicted on the Lanzón with the animal-like elements necessary to convey menace and aggressiveness; yet they are combined with motifs of a much more definite and specialized significance. The eyes and the bony relief of the nose and nostrils, combined with the sharp, curved fangs and the powerful mandible drawn at right angles, are remarkably similar to the features on the Raimondi stele. The three coils formed by the bodies of the snakes that uncurl on either side of the forehead are the same in number, direction, and relative diameter as those found on the Gorgon of the Temenos at Syracuse. On the mouth the bands formed by the lips curve up, describing an ellipsoid identical with that of the Gorgon figures of Sicily and Etruria, whereas the lips on the Raimondi stele curve down. Whatever may be the importance of this unexpected similarity of forms and arrangement, the sculptors of the Chavín monument gave undeniable proof of consummate technical and artistic ability. The very complexity of the detail and the tendency to load motif on motif (the snakes, fangs, and appendages in the form of ostrich feathers are repeated one above the other everywhere on the surface) provide such clear evidence of long training in conceiving and executing works of this kind that the attribution of the Lanzón to the initial stage of Andean artistic development no longer seems acceptable.

Much cruder are the Chavín sculptures in the round. They are in general male human heads made to be affixed to the outer wall of the Castillo, where some of them are still to be found *in situ*. These are, however, so mannered in style that the idea of their being primitive creations is untenable. Their entire surface is, in fact, furrowed by very deep incisions and grooves that leave in relief thick cords that resemble the convolutions of the brain and sometimes are consciously transformed into tangles of snakes. Perhaps the purpose was to emphasize the natural wrinkles of the face; the effect resembles the heads of the Semitic Humbaba of Mesopotamia.

Monoliths of Cerro de Sechín. The stone sculptures of Cerro de Sechín (PL. 166), discovered in 1937 by Tello 5 miles from Casma on the northern sector of the coast, are simpler and more rudimentary than those of Chavín, both in subject and technique. They comprise about ninety large, crudely cut stones found standing upright in the ground at short distances from one another, forming a long line. Some of these so-called "monoliths" are small (from 23 in. to 4 ft.) and others are larger (from 6 to 13½ ft.). They are so arranged that between each pair of large stones stands a smaller one. Among the sub-

jects represented on the front surface of the 21 taller stones are the following: eleven full human figures; three columns (each formed by five small drums which, according to the discoverer, are vertebral discs); two double series of six human faces placed one above the other as are those on the calendrical glyphs of Yucatán; two compositions of double vertical worm-shaped ribbons; and two of several horizontal rows made of rings or perhaps eyes. With few exceptions, the smaller stones, which are more or less cubical in shape, are decorated with a very crudely depicted human head, always in profile, with clenched teeth, long hair, and sometimes streams of lines issuing from the mouth. The full figures also show the face, legs, and feet in profile, but the torso is turned either full front or at a three-quarters angle. The nudity of these figures does not exclude a sort of small grass skirt, in the manner of the Maori and Hawaiians, and also a headdress shaped like an Egyptian fez with plumes sweeping backward and kept in place on the head, as suggested by an ambiguous trace of diagonal lines, by a ribbon that encircles the neck. Each figure clutches an ax, which in some cases is replaced by a staff or scepter similar to those in the Tiahuanaco frieze and the textile decorations of Pachacamac. The figures are delineated on the stone's surface in strong, simple lines rather deeply incised, with no attempt at three-dimensional effects or the depressed background characteristic of Peruvian art.

The frieze on the Tiahuanaco doorway. Most important among the sculptures of Tiahuanaco is the frieze that adorns the "Gateway of the Sun," a monument which, besides being the most famous, represents the most original and perfect artistic creation of its type in South America (PL. 169). Tiahuanaco has already been mentioned for its ceramic work and its "kalasasaya," or enclosure of upright stones. The Gateway of the Sun is at present inside this enclosure near its north-western corner, though whether it was originally located there is debatable. It is a monolith carved from very hard volcanic stone (andesite) and is 9 ft. tall, 12½ ft. long, and 9½ in. thick; its weight is calculated to be about ten tons. In technical terms, it might be classified as a trilithon composed of a single mass of stone; in fact, its resemblance to the megalithic monument of Hahake at Tongu-tabu warrants such a comparison with regard to form.

The opening of the doorway is cut at right angles in such a way that the false doorposts are vertical; on the reverse side of the wall containing the doorway four small niches are cut into the upper section of the stone and two large niches in the lower section. The doorway was discovered broken in two, perhaps by earthquakes, at the point where the upper part of the stone joins and continues the right doorpost; however, it has been set back in place and has its original appearance.

The name "Gateway of the Sun," given to the doorway during the 19th century, has enjoyed undeserved fame and has survived the "solar" phase of historico-religious studies of the Incas. The literature on the monument, aside from the mention of Tiahuanaco in the chronicles of the 16th and 17th centuries (for example, those of Cieza de León, Betanzos, and Cobo), begins in 1839 with the work of D'Orbigny. However, after the famous letter of Angrand to the architect Daly in 1866, the subject takes on extraordinary liveliness, in terms of both the systematic investigations of specialists and the imaginative interpretations of dilettantes.

Most of the studies have been devoted chiefly to the decoration covering the upper section of the front of the doorway. This is a frieze carved for the most part in low relief over the entire surface extending to the side of and below the central figure. In this central figure, however, the face, head, and two scepters stand out from the background in perceptibly higher relief. The face, which occupies almost a third of the total height, is square in form; its features are geometric: the eyes are two circular depressions, the nose a markedly raised trapezoid, and the mouth a horizontal slit. The figure is clothed in a *cusma* reaching to the middle of the leg and encircled by a belt; the arms are opened, and the hands hold two "scepters" (probably two clubs such as can be seen in more distinct images);

the hands have only four fingers; and the head is covered by a *llautu* from which radiate some 20 ornamental appendages terminating in what are apparently metal disks and small puma heads. The rich necklace, the fish-shaped breastplate, and the embroidery and "appliqués" of the tunic are all represented in a delicate incised design. The tunic also has incised on its lower border a row of six trophy heads, which can be regarded as embroidered on the cloth, whereas two more heads in very high relief hang symmetrically from the elbows. On either side of the figure are three parallel horizontal bands, each composed of eight identical secondary figures clasping clubs and forming a symmetrical pattern with respect to the central figure. The upper and lower rows differ only in the detail of the clubs, which in the upper row end in a double head.

The faces of the 32 figures depicted on these two rows are covered by anthropomorphic masks, whereas the other 16 figures in the middle row wear masks simulating the head of a condor. All of them, however, appear to kneel on one knee in an attitude of reverence toward the central figure, which dominates the entire frieze. For more than a hundred years this attitude has caused scholars to maintain that the frieze depicted a religious scene and has given rise to what might be called a "political" interpretation, according to which the frieze is regarded as a portrayal of three distinct social groups gathered together in a ceremony of homage to their sovereign. However, in 1919 the Bolivian Díaz Romero stated, on the basis of physiological observations, that the figures were depicted in the act of running, a revolutionary idea that was not favorably received at first. Today, however, a skeptical attitude is untenable because of the conclusions of art historians concerning the vases of Corinth and Attica, the Gorgon sculptures of Corfu and Selinus, the bas-reliefs of the Hittites, and the cylinders of Assyria, as well as the shell carvings of the Kentucky Indians and the Yoruba designs on leather bags, in all of which the figures shown in the act of running are represented with one knee on the ground in the characteristic position that experts call "Knielauf." Consequently, in addition to the religious and political interpretations, there is a third interpretation, according to which the scene on the Tiahuanaco frieze depicts an episode in the rites of a group of celebrants.

Each of the 48 figures wears a crown with five bird-shaped appendages, has large wings on its shoulders, and a sort of tail or train. Farther down, along the entire length of the façade, runs a border composed of a series of meanders among which are inserted about 15 human faces seen full front, reproducing on a smaller scale the design of the head of the central figure.

The many interpretations given to this monument during the 19th century are not worthy of mention today, since they lack concrete critical foundation both stylistically and technically; in addition, the dating of the monument in a very remote epoch (actually 13,000 years ago!) has been proved completely unrealistic. However, a positive contribution to the critical study of Tiahuanaco was made in 1892 by Max Uhle. He was the first to make the simple observation that the 48 minor figures in the frieze are exact reproductions of a stereotyped model; he demonstrated this by cutting out the outlines of several of them and superimposing them, thus proving that they matched perfectly. Hence it is clear that the general design of the decoration is simply a translation into stone of esthetic concepts and techniques developed in textiles and embroidery. Technically, to call the frieze a bas-relief is a misnomer, since there are no contrasting planes, properly speaking; actually, the technique is similar to *champlevé*, as flat figures are elevated slightly against a background and the raised surface is enhanced by incised linear decoration. In other sculptures there is a similar wealth of minute incised motifs, but in the Tiahuanaco frieze the intent behind the choice of this technique is quite different, as is shown by the sharply emphasized prominence of the principal figure, which, thanks to the vigorous handling of volume and plane, is worthy of serious consideration as sculpture. In short, it would appear that the successful fusion of several techniques (the sculpture in the round of San Agustín, the graffito work of Chavín, and,

above all, the textile arts of Paracas and Lurín) made possible this work, which, by virtue of its extremely careful execution, the crispness of its lines and planes, and the harmony of its parts, occupies the highest, most significant place in the history of Andean art.

Sculpture in the round of Tiahuanaco. Also at Tiahuanaco are human heads, carved in trachyte stone and affixed to the walls of the smaller enclosure, some of which show a considerable degree of observation of nature. In addition, the large busts that at present stand at the entrance to the village church are noteworthy. But the best known among the Tiahuanaco specimens is "El Fraile" (the friar, PL. 168), which, like the stone heads, is located in the interior of the *kalasasaya*. It is a rough-hewn statue of remarkable size, a real "statuary column," as A. Gallo defines it, representing a man with a nude torso and barely indicated limbs. It does not lose the appearance of a massive pilaster when viewed from either side or from the back; the front parts only (face, hands, and belt) reveal minute chisel-work in their ornamental details, such as the series of crustaceans decorating the belt and the votive tablet held in the hands. Otherwise, the figure is coarse and rough in its facial features and the shaping of the fingers. The traditional name that the natives of the place gave to this monolith, far from denoting a friar (as was formerly thought) means, in the Aymara language, "the principal stone." This would suggest that when the *kalasasaya* was used as a ceremonial enclosure, this statuary column was regarded as the most important menhir within its area.

"El Fraile" may be considered as the least archaic in appearance of the prototypes of a whole series of similar anthropomorphic menhirs, specimens of which have been found here and there in the territory ruled over by the Colla civilization and in the interiors of stone enclosures patterned after the *kalasasaya*. It is sufficient to mention their existence, since their esthetic value is extremely limited.

Painting. At the beginning of this section, the statement was made that modeling was almost completely monopolized by the manufacture of pottery. This statement may be repeated with regard to painting. Actually, it was in the field of ceramics that the ancient Peruvians practiced the pictorial art and developed it through its successive stages. Apart from the decorations painted on pottery, Peru has not given us any other pictorial creations, if we except panels in a few temples, such as those painted on the terraces at Pachácamac. There is, however, no evidence that there were no mural paintings on inner walls, since such paintings may have been destroyed. The large mural fresco of the Temple of the Moon at Moche, reproduced in the Museo Nacional in Lima and in the Art Institute in Chicago, lends support to this assumption. This fresco consists of five successive episodes placed side by side, forming a kind of horizontal panel. The original has been destroyed, but these reproductions reveal the general content of the painting. Its episodes represent the revenge taken on men by their armor and domestic utensils during one of the periodic upheavals that mark the end of an era.

In one of these scenes, a pounding table drags its owner by the hair; in another, a war helmet pursues and strikes the warrior; in a third, the bow has shot a goodly number of darts into the body of the man. In other scenes, a club, a kitchen utensil, and a grindstone rebel against their master. The grindstone does not brandish any weapon, but seizes the man by the hair. Other aggressive objects are armed with clubs, shields, and arrows. The artist has endowed the inanimate objects with lively movement and energy and has supplied them with human legs and arms, just as in the painted decorations of the Mochica ceramics. The fresco is in color, and until the late 1920s was still fairly well preserved. The single figures are the same as those which appear on the Mochica vases of the pictorial style. The footwear and kneepieces, the metallic hats, the square shields, the weapons — all are the same, but magnified about 12 times. To grasp the inner meaning of the fresco is certainly more difficult than to decipher its episodes, for

we are not able to penetrate the cosmologic and eschatological thought that motivated it. The fresco may be considered as an interpretation of the theme of the Last Judgment, conceived by the anxiety of a people haunted by terror of Doomsday. They are scenes typical of a period of darkness, or *tutayaqpacha*, which marks the twilight of a sun, the interval between an age that has come to an end and the succeeding age. In the fresco, men still have their weapons but no longer possess the strength to react. They succumb to the aggression of their tools, which, craving revenge, come alive to punish them. These scenes were formerly thought to be nothing but a coarse and whimsical fantasy of a primitive people. Modern mythology finds in them instead the proof of an elevated spiritual plane and extremely keen penetration into the enigmas of time, destiny, and their perpetual powers of renewal.

TEXTILES. During most of the periods of Peruvian art which we have examined, the technique of weaving seems to have been remarkably diverse. Quantitatively, the most important discoveries come from the coastal zone, where the dry soil has the same powers of preservation as that of Egypt and the semidesert regions of western Asia. The coastal plain, especially its central region and particularly Ancón and Pachácamac, yielded outstanding and plentiful examples of textiles. Second in importance is the southern region, with Nazca and its adjacent valleys. Paracas has yielded an almost unbelievable quantity of textiles (PLS. 170-172, 181-184). Each stylistic period of these coastal regions reveals a definitive preference for a particular technique. Thus, Nazca and to a greater extent Paracas show a preference for embroidered decoration, whereas Pachácamac and the middle coast favor the tapestry method. The yields of the Sierras sites have been less plentiful because of the humidity of those regions.

Almost all the surviving textiles of the Andean cultures have come from graves, because of the widespread custom of placing an array of garments and cloths in the tomb and on the bodies of the dead. As early as 1621, the Jesuit Joseph Arriaga remarked: "Death and burial are accompanied by great superstitions; underneath the shroud, the corpse is attired in new garments; other articles of apparel are folded and laid beside it in the grave."

Nature did not grant the Peruvians any considerable wealth of raw materials. Of the four fibers used by the great weaving civilizations — flax, silk, cotton, and wool — only the last two were available in Peru. Peruvian cotton (*Gossypium barbadense*), although slightly better in quality than the cotton of antiquity, does not have the fineness or the silken appearance of Indian cotton. It is grown in the coastal valleys, and in our day, as in the past, the plateau people are dependent upon the coastal population for their supply. Conversely, the coastal peoples are dependent upon those of the Sierras for the other textile fibers, available to them, which come from the wool of the llama and the alpaca as well as the vicuña. These three Camelidae of the mountain region supply the Peruvians with all their wool; but the vicuña is still wild. The llama gives a limited quantity of glossy, somewhat stiff wool; the alpaca furnishes, in more generous amounts, a wool of longer staple and easy to spin, though slightly coarser. The wool of the vicuña is the most highly prized and has been compared to silk because of its fineness and its gloss (D'Harcourt); the staple is somewhat shorter, however, and thus limited in its uses. Cotton and wool fibers were made into threads by hand by means of spindles of hard wood, mostly painted in two colors or engraved with diminutive patterns. Before being placed on the loom, the thread was usually doubled, at times even trebled or quadrupled, to obtain a more uniform thickness. In spite of the plainness of their materials, the patient spinners of old succeeded in making for some of their delicate fabrics (as shown by microscope tests made by M. D. C. Crawford) threads that were three times thinner than those produced by modern industry.

The single threads were more compact and the double threads more twisted and cylindrical than our modern threads. For an equal thickness, they contained more material and were stiffer. The specific properties of the fibers employed were

well known to and intelligently exploited by the weavers. Wool was preeminently suitable for the woof because of its softness and the chromatic effects brought out by dyes, and cotton was often employed for the warp. The red color was obtained from cochineal, with the help of a mineral mordant (silicate of calcium and aluminum); for yellow, ochreous earths were used; brown was obtained from vegetable juices, and blue and green from indigo baths.

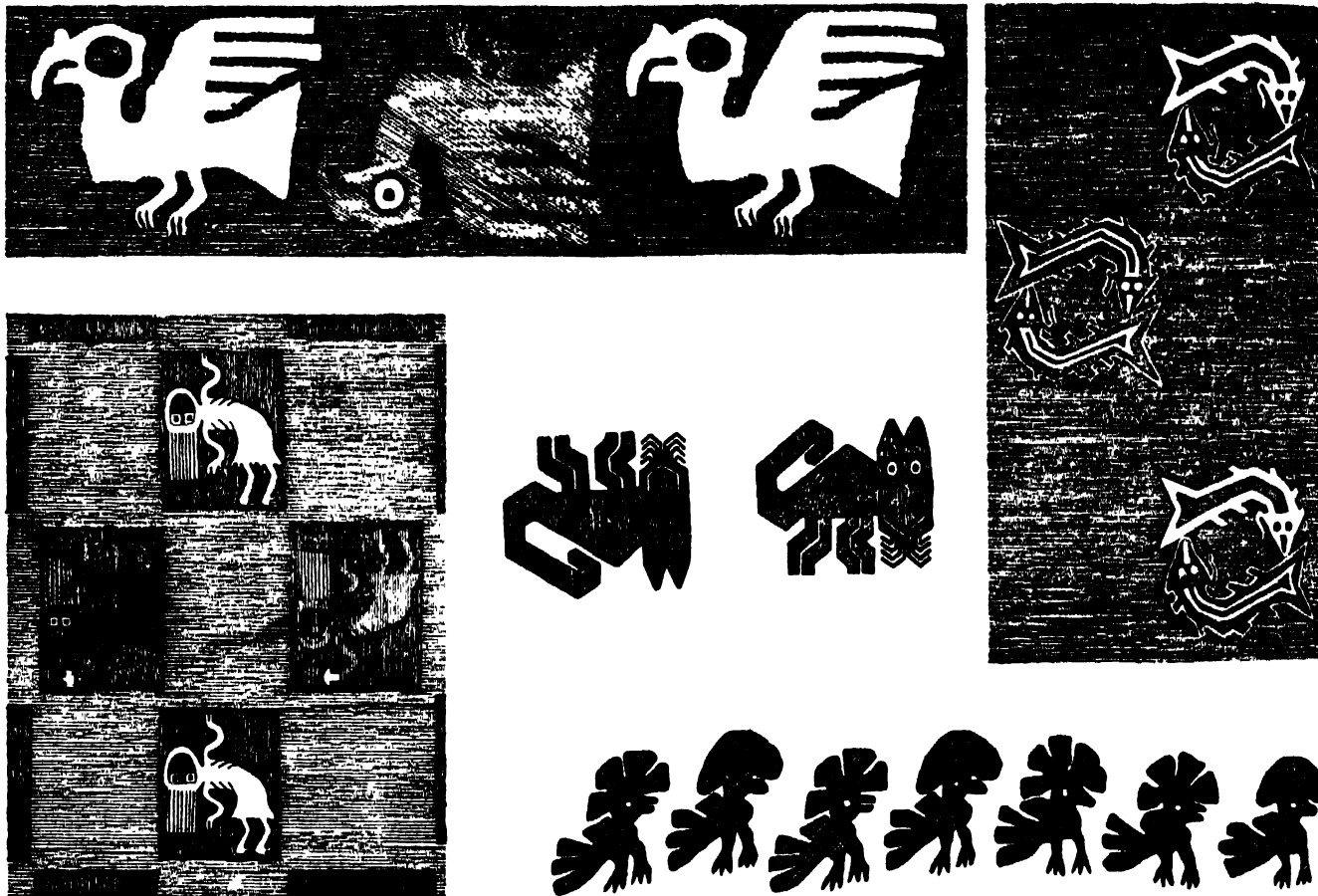
The hand loom with which the Peruvian woman turned out her products was primitive; specimens can still be found today in native rural areas. A spirited and faithful description of the weaving technique was given by Father Cobo, a scrupulous 17th-century chronicler. "Their looms are so small and inexpensive that one of them could be assembled from two poles of the thickness of an arm and of the length of three or four cubits. The warp is wrapped around the first pole, and the finished fabric is rolled around the second. In order to make the fabric solid and compact, the natives drive four stakes into the ground, each a span long, two on each side at a distance, more or less, of a rod and a half [a little more than 4 ft.] apart, depending on the fabric to be woven. The first pole is tied to two of the stakes, the second to the other two; in this way, the fabric is raised to the level of one span above the ground, then stretched taut." The loom in Father Cobo's description is slightly superior to the current type, in which both the major and minor weaving beams are placed at a certain height above the ground, and the minor beam is independent of the weaver's body.

The variety of techniques was paralleled by the variety of textiles obtained by them. In the collections of the Museo Nacional of Lima, B. K. de la Torre differentiates the following techniques: (1) two varieties of tapestry — brocaded and embroidered; (2) seven varieties of plain fabrics; (3) double-faced cloths; (4) feather fabrics; (5) *chaquiras* (fabric adorned with gold bangles, tiny bells, and gold particles); (6) gauzes and netted fabrics; and (7) combination weaves.

The three varieties of so-called "tapestry" — ordinary, brocaded and embroidered — were by far the most common fabrics in ancient Peru. This technique is perfectly adapted to looms in which the minor weaving beam is tied to the weaver's belt, since it requires the direct action of the fingers and of the short wooden hatten customarily used. This suggests a parallel between the abundant output of tapestry and the diffusion of this type of loom. The colors of the fabric are those of the wool, which is of course more apparent on the surface. The wool is not of uniform color and continuous from edge to edge, since every separate color pattern must fill its preestablished zone exclusively. Sometimes it was the practice to insert a small separation strip, generally black, between the two areas of color, but in most cases an interweaving technique was employed. In the brocaded type of tapestry, a second pattern was added, by superimposing a secondary woof. However, this was done while the textile was still on the loom, the first tapestry serving as a foundation for the second. In the embroidered variety also the secondary design was produced by means of a secondary woof but only after the fabric was removed from the loom, since the work entailed the use of an embroidery needle. De la Torre points out that brocaded textiles may have some loose threads hanging from the reverse side, whereas embroidered fabrics may be dotted instead with little knots. Actually, these details can be discovered only by specialists working with modern laboratory methods; in most of the textiles, especially the finest ones, the naked eye fails to detect those particulars. Peruvian tapestries exhibit the greatest precision of execution on both sides. "When we think," says D'Harcourt, "that an artist of the French textile industry spends, on the average, a whole year in filling a square meter with wool materials that are relatively coarse as regards their thread diameter, we may well ask ourselves how long it must have taken the Peruvian weavers to achieve their textile wonders. Our question is all the more warranted since, in order to carry out a task so exacting, a peaceful and secure existence would seem to be absolutely necessary, whereas this was far from being the case."

The category of plain fabrics includes many types. Undecorated fabrics, which are the simplest, were generally obtained by using cotton threads of uniform quality, thickness, and color. At times, however, a crepe fabric was made by using threads of different twist. Other varieties were fabrics with lines or stripes of various colors, running either lengthwise with the warp or across with the woof, and checked, embroidered, painted, or stamped designs.

As for decoration, the kinship of the principal patterns with those appearing on ceramics is of great help to the classifier. This cannot be said, however, for the secondary patterns ornamenting the textiles and filling their empty spaces: broken lines, crosses (Maltese crosses, at times), meanders, spirals, zigzags, and others, in an infinite number of combinations and elaborations. These secondary patterns are to be found everywhere, and their appearance is not necessarily a clue to identification.



Decorative motifs of Andean textiles.

The fourth category, feather textiles (PL. 181), remained in favor from ancient times down to the Conquest. The technique was very complicated. The first step was to weave the garment, to the exact size desired, in fine cotton cloth. Over this cloth, bird feathers, selected for their color and flexibility, were then placed in horizontal rows. Every feather quill was bent double and fastened by means of a string; a second string fastened it to the cloth, and the feather tips were made even. A second row was inserted close to the first, so as to cover the quills and seams (A. Coulin-Weibel).

Particularly interesting from the historical-cultural point of view is the fact that the Peruvians knew the technique of resist dyeing based on the use of knots, rings, or temporary coatings of the fabric. During immersion in the coloring bath, the fabric absorbs the dye on its free surface only.

In spite of the efforts of specialists, it has not yet been possible to establish criteria to fix accurately the epoch in which certain fabrics were made. Under certain circumstances, it is possible to infer approximately the general style of the fabric if not the place of manufacture. However, no theoretical identification can ever equal for reliability the annotation of the discoverer of the tomb concerning the provenance of the textile. Naturally, this annotation is either absent or unreliable in the case of items collected by amateurs or bought at antique shops.

It is nevertheless a fact that representations of sea fauna (sea birds and fish) indicate a coastal provenance, whereas simple, purely ornamental effects, rather than naturalistic decoration are found in the fabrics of the highlands.

Inca textiles have reached us mostly in the form of such articles of apparel as the tunic (*uncu*), the shirt (*cusma*), the head covering (*llautu*) or turban, and the cloak (*llacolla*). The splendid examples of the *cusma* found by Bandelier in the burial sites of Lake Titicaca are well known. The ornamentation of these Inca sleeveless shirts, made in the form of a poncho with a slit for the head, is extremely elaborate. Seen from the front, they are divided into two halves: the upper half has from five to seven bands of ornament, one above the other, not counting the diagonal pattern surrounding the neck opening; the lower half has up to ten bands of crosses and lozenges, spirals and meanders, and extremely ornate geometric motifs enclosed within small multicolored rectangles. In general, the patterns in the upper part are comparatively large, whereas in the lower part they are more abundant and varied and of very small size. Cossio says that the Inca fabrics are products of a light, cheerful, refined, and varied art, which avoids complicated symbolism and maintains a "reconstructive and all-embracing" unity of expression, reflecting the social and economic system of the Incas. Inca fabrics show a fondness for vivid, contrasting colors, such as red with green, yellow with

blue, and purple with orange, combined with intermediate hues, especially a beautiful scarlet.

As a rule, the garments in the graves of the Necropolis of Paracas (PLS. 182, 183) consisted of plain cloth with embroidery. Most of this material is made of cotton, although some is of wool; it is generally strong and dark and was embroidered by needle in bright-colored wools. Of all the Peruvian garments, the "mantle" is the largest. It is rectangular and measures about a yard in width by some three yards in length. The perfect mantle consists of the following parts: a rectangular cloth on which the embroidered designs are carefully arranged; two bands completely covered with embroidery, which serve as edging for the long sides; and fringe along all the edges of the mantle except the middle section of the two short sides. A strange characteristic of all the human figures embroidered on the Paracas mantles is that the soles of the feet are consistently shown, so that the figures seem suspended in mid-air. The figures are strange and complicated combinations of various elements of animals and inanimate objects (fish, men, birds, cats, trophy heads, and great war helmets).

Many characteristic features of this figural art, with its dominant conventional and mechanical motifs of symmetry and repetition, undoubtedly stem from the techniques of weaving. In a certain sense, those principles became an ingrained mental habit with the Peruvians. Their conception of form was always that of the weaver, even in cutting stone, as in the 48 little squares of the Tiahuanaco frieze, and stamping arabesque into clay, as on the walls of Chan-Chan and Limatambo.

THE GOLDSMITH'S ART. The arts discussed so far (architecture, ceramics, sculpture, painting, and weaving) derive from the region of the central Andes, or Tahuantinsuyu. It was primarily the peoples of Colombia who engaged in metalwork for ornamental purposes.

The earliest data on the goldsmith's art in Colombia were handed down to us by the Spanish chroniclers of the "New Kingdom of Granada," who had in mind mainly the zone inhabited by the Muisca, or Chibcha, tribes—that is, flourishing Cundinamarca and particularly the state of Guatavita (one of the ten small Chibcha monarchies). Their courtly ceremonial had already engendered one of the most persistent American traditions, the legend of El Dorado. The chroniclers relate that according to the custom, the young sovereigns of Guatavita, after a period of penance and fasting intended to make them worthy of occupying the throne, solemnly fulfilled the rite of initiation to public life by embarking on rafts and proceeding to the middle of the sacred lake where, their bodies naked but powdered with gold dust, they plunged into the water, offering to the water deity "a great heap of gold and emeralds." These and other ritual customs of the same kind account for the great quantity of jewels that lay, and still lie, scattered at the bottom of the sacred lagoons of Colombia (Guatavita, Siecha, Ubaque, and others).

The reports of the old chroniclers were vividly recalled to posterity when, about the middle of the 19th century, the first astonishing rumors concerning the lucky discoveries of the *huaqueros* began to circulate. The *huaqueros* were bands of adventurers who, spurred by gold fever, pushed into the mountain regions of Quindío. In the mid-19th century also, the earliest archaeological essays, by such Colombian scholars as Uricoechea, Zerda, Posada Arango, Uribe, and Restrepo Tirado, were written, and it was then that the earliest collections were assembled. In 1892, on the occasion of the quadricentennial of the discovery of America, a magnificent collection of South American statuettes and jewelry in gold was exhibited at the Madrid Exposition. This show, which was organized by the two Restrepos on behalf of the Colombian government, contained no less than 452 specimens in gold as well as some in *tumbaga* (an alloy of copper with native gold, containing varying amounts of silver). By that date it was already evident that the goldsmith's art had developed in Colombia not only on the plateau of Cundinamarca (as tradition and the chronicles had it) but in the Cauca basin as well, with its nuclei at Antiochia toward the north and Cartago in the center. After 1940, the

existence of a fourth center of the goldsmith's art in the neighborhood of Mount Calima, in the same valley of the Cauca, was reliably established. Today, therefore, it can be stated that the native art of the goldsmith extended through the whole of Colombia, from the Panama region to the north, to the Ecuadorian and Peruvian sectors to the south.

Modern specialists differentiate various styles, which Pérez de Barradas lists in the following order: Calima, Quimbaya, Darién, Sinú, Tairona, Muisca or Chibcha, and Tolima. In the past fifteen years, excavations in the Cali sector have yielded rich harvests of jewels, now in the collection of the Museo de Oro of Bogotá, which owns 6,700 pieces, described in a book by Pérez de Barradas. This volume, however, is almost entirely devoted to the materials of the Calima style (PL. 209). The Quimbaya style (PLS. 210-213) is represented by the 62 pieces of the no less famous "Quimbaya Treasure," donated by Colombia to Spain and at present housed in the Museo de América in Madrid, and by the gold mask in the British Museum (PL. 213), which is of overwhelming beauty and simplicity. This mask was made by pouring the molten metal into a negative clay mold which had been made from a positive mold, as proved by the specks of clay that still adhere to the nose of the mask. In addition to this technique, the Colombian goldsmiths commonly used hammering, *repoussage*, and the *cire-perdue* process, especially for small objects. Moreover, they knew how to laminate, draw wire, solder, and even gild. Low alloys, or *tumbaga*, were given the color of pure gold by means of an extremely ingenious procedure, mentioned by the chroniclers, which consisted of immersing the metal in the acid of certain vegetable juices, which acted on the low-alloy gold in the same way as nitric acid, giving the object a shining yellow color. *Tumbaga* was used to make thousands of small anthropomorphic idols, more or less geometrically stylized, called *tunjos*. Their features and limbs were fashioned of thick wire soldered to a foundation or core of sheet metal. Many specimens are still to be found in the Chibcha region (PL. 212).

Other examples of the goldsmith's art in Colombia are gold masks, diadems, earrings (*orejeras*) in various shapes, nose pendants (*narigueras*), pectorals, necklaces, long pins with large, carved heads, bracelets, rings, and tweezers. In addition, there were crossbows, little trumpets, spoons, and other objects.

Gold and *tumbaga* were as familiar to the Ecuadorian peoples as to those of Colombia. Excavations in the coastal province of Esmeraldas, which owes its name to the great quantity of gems found there by the Spaniards, have also disclosed platinum objects. Later, the burial sites discovered beneath the artificial mounds called *tolas* yielded personal ornaments, little bells, long pins, and other objects (PL. 214). In the nearby province of Mantas, large pieces of jewelry of gold and silver, often incrustated with emeralds, were used.

As for other metals, the great quantity of silverwork found in Peru would indicate that the Peruvian peoples were the first to master the technique of extracting and processing that metal (PL. 218). The working of copper spread to the coastal zones of Colombia, Ecuador, and Peru, where the metal was used pure, whereas a harder tin alloy (insufficient, however, to produce bronze) was a specialty of the region that is now Bolivia, whence it spread to northern Argentina. After the Spanish colonization, South American natives began to utilize the brass brought in by the invaders. The Chilean Mapuche employed a much more variable and complex alloy (silver and nickel plus other white metals resulting from the melting of coins) in making such feminine ornaments as pectoral pendants (*siquill*), crosses, and long pins.

It was in northern Peru, however, that the goldsmith's art reached its highest stage of development. The sculptural inventiveness of the Chimú people seems to have become progressively oriented toward the art of metalworking, while ceramics fell into monotonous mediocrity. Among the most ambitious and elaborate works may be singled out the magnificent pectoral plates and armor proudly displayed by the warriors portrayed on ceramic vases. A tomb at Chan-Chan yielded a complete set of matching jewelry formerly owned by a great Chimú chief. This set, now in the Chicla museum, consists

of a crown surmounted by three gold ornaments 11 3/4 in. high, two bracelets, a pectoral, a large necklace with pendants, and various minor plaques. Also of Chimú manufacture are the tubular vases, mostly of silver, showing on one side a stern human face with the typical large vulturine nose, and a harsh U-shaped crease joining the base of the nostrils to the fold of the lower lip (PL. 219). In 1936, an extraordinary number of gold, silver, and *tumbaga* objects came to light at Illimo, near Lambayeque. Some pieces are really exceptional, particularly drinking vessels of fine gold. Three of them are in *repoussé* work with meanders and other patterns (height, 8 1/8 in.; diameter at the mouth 6 7/8 in.), whereas the other two are set with turquoises (height, 5 7/8 in.; upper diameter, 3 3/8 in.). In addition, there is a *tumi*, or large ceremonial knife, 17 in. long and weighing more than 2 pounds, unsurpassed in South American archaeology (PL. 215). The handle consists of an anthropomorphic idol in relief with a large semicircular crown; the figure, entirely covered with filigree and turquoises, stands on a pedestal joined at the base to an extremely thin half-moon blade. Obviously the purpose of the knife was purely ceremonial, and the richness of the materials as well as the artistry of execution complement the truly singular esthetic conception.

Museum collections confirm the fact that the Chimú goldsmiths attained amazing dexterity in all the branches of their art and that they handled the various metals with equal ease. In the south, meanwhile, the Nazca natives worked exclusively in gold, with a preference for working with rolled sheets. The fine *repoussé* Nazca masks that have survived (PL. 217) are reminiscent of those of Esmeraldas and Colombia. During the Cuzco hegemony, the Inca goldsmiths liked to contrast metals of different colors, obtained by the same technical devices formerly used in Colombia and by the Chimú tribes, and thus to differentiate the garments from the head and the body within the same figure or obtain other chromatic variations.

CONCLUSIONS. A review of the reaction in learned circles to the gradual disclosure of the civilization of the Andes, whose existence had not been previously suspected, must necessarily begin with Alexander von Humboldt (b. Berlin, 1769; d. Berlin, 1859), who, at the beginning of the 19th century, traveled the entire length of the Andean cordillera. His book, dating from 1813, demonstrated that Von Humboldt had to a certain extent grasped the cultural unity of the Andean region. There were no previous serious critical and esthetic appraisals and no comparative literature; thus it was necessary for Von Humboldt to begin by comparing and correlating, because a description of isolated phenomena would obviously be inadequate. Writing for European readers of the romantic period, who had been nurtured on classical culture, he compared the Andean royal roads to those of imperial Rome radiating to the remotest corners of Italy, France, and Spain; to describe the masonry technique of the last Inca period, he used as an illustration the *opus quadratum* of the Roman walls; to convey his impressions of the trapezoidal doorways of Cuzco, he compared them to the pylons of Karnak. The first reaction of cultured Europeans to the astonishing monuments of the Andes was a sense of wonder and bewilderment, as the concepts of Mediterranean classicism were the only art legacy then accepted as an esthetic possibility, even amid the fanciful excesses of the romantic movement.

Following a century of conjectures and generalizations, the archaeologist Max Uhle (b. Dresden, 1856; d. Berlin, 1946) assumed the task of basing investigation on rigorously scientific principles. He soon realized that it was not sufficient to gather data sporadically, unearthing and describing at random, but that the research must be systematized and extended to the virgin soil in each center successively and the findings put in chronological order.

As to the origins of Andean civilization, the first region, according to Uhle, to be fertilized by a culture that was not strictly utilitarian was the coast of Peru, to which the basic elements of a Maya-like or pre-Maya civilization were brought by sea. This same culture provided the spark that kindled the highly advanced civilizations of Middle America.

After Humboldt and Uhle, Julio César Tello (b. Huar-

chiri, 1880; d. Lima, 1947) established an extensive collection of facts and interpretations, which, whatever may be the final judgment on his theories, challenged the ideas of the two preceding historians. Neither the classical nor the Mayan civilizations, he claimed, should be considered to account for the civilization of Peru; it is solely Peruvian, and its origins should be sought only within its own bounds, or at most in the closely adjacent territories, including those in the eastern part of the present Republic of Peru. If a people migrated to Peru by land or sea, they arrived in a primitive stage, and if they created fundamental elements, as Uhle believed, they did so in Peru.

All Tello's ideas are corollaries of this premise. Of his four periods of civilization, the first has its sources in the Amazon forest. The second, originating in the highlands, is represented by the Chavín domination. He placed the third, or coastal, civilization only 2,000 years after the start of the first cycle, and this civilization was followed by the fourth period, that of the hegemony of Cuzco. He called these periods "ages," following the examples of Poma de Ayala and Fray Buenaventura Salinas. Tello accepted their four successive civilizations, corresponding to the runic chronology of the "ages of the world."

To A. L. Kroeber (1944) we owe the most valid judgment of Tello's work—that his position is in some ways like that of Schliemann in Near Eastern archaeology. An archaeologist by profession, Tello's real calling was geography. He was preoccupied with the demonstration of his belief that the archaeological history of each of the three physical environments ("forest," "sierra," and "coast") coincided with the nature of the soil and climate, notwithstanding the contradictions that inevitably resulted from this theory. But since the entire ethnic panorama could not be explained merely in terms of climate, flora, and fauna, he was compelled, not always consistently with his basic thesis, to admit the existence also of three "latitudinal zones" crossing his "longitudinal bands of distribution," extending from the forest to the sierra and ultimately reaching the coast. Finally, his reluctance to give credence to any movement of population extending beyond the frontiers of Peru led him to place all the stages of development in a chain sequence beginning with the most backward and ending with the most advanced.

The migration of cultures crosswise between the sierra and the coast is the point where the two doctrines of Uhle and of Tello (i.e., the exogenous and the endogenous theories, respectively) inevitably conflicted. The logical requirements of his premises led Tello to maintain vigorously that the shift from the sierra to the coast was made through the following stages: (1) from the Amazon basin to the valleys of the Hualaga and Marañón Rivers, (2) to the inter-Andean corridor, (3) to the basin of Lake Titicaca, (4) to the Pacific Coast. In Tiahuanaco itself, he claimed, there were at a remote period wooden structures in tropical style originating in the Amazon basin, which he believed served as models for the stone structures built after the severe climate of the plateau made it necessary to use stone construction. Velarde thought it possible to confirm the precedence of wood as building material at Tiahuanaco. He made this deduction from the "stepped" recess found at the upper corners of the Gateway of the Sun and of the door of the "Pantheon," which is not compatible with stonework but recalls rather the clay construction peculiar to the coast. In Velarde's view, even the frieze of the 48 "kneeling figures" was an imitation of a clay wall decorated with modeled designs in the manner of Chan-Chan and of "La Centinela."

According to the more conciliatory theories of Horkheimer, neither the sierra nor the coast can claim to have been developed first; he believes they grew simultaneously and their respective periods of predominance may be said to balance. The theories of Uhle and Tello are both true, since there was no "command to advance" from the east rather than from the west. This simple formula has a good basis of truth, particularly since it served to make clear that the old chronicles, upon which certain writers place such reliance as source material, were the works of Spanish priests and soldiers who were familiar with the centers and events of the sierra but knew nothing of those of the coast.

The varied topography offered by high mountains, valleys, plateaus, and the seashore, and the resulting variation in climatic and biological conditions, have induced an excessive belief in the fragmentation of population in Peru and consequently the conclusion that the racial characteristics, temperament, and artistic skills of the inhabitants were a direct result of the physical characteristics of the various regions. Actually, physiological, social, and mental characteristics in human beings vary with large continental areas, such as (in South America) the wooded lowlands, the cereal-growing plains, and the Andean cordillera, extending from Panama to the borders of Patagonia. Considering the nomenclature alone, it is quite true that in the mid-20th century the term "Andean" has achieved greater currency in the language of archaeologists than it previously had, but on more careful observation we find it is often used merely to mask the old conceptions. Tello, for example, conceived the boundaries of the Andean cultural complex as corresponding to the frontiers of the Cuzco empire. But Tahuantinsuyu, "the realm of the four directions," was in fact a political aggregation and not strictly speaking a "geocultural" entity. As a corollary, the hypothesis of physiographic characteristic and outward migration coalesced in the conviction that the cultural forms of all Andean America were the product of impulses that radiated outward from the Peruvian nucleus.

Hence the hypothesis of outward diffusion is based upon fact but is not the entire truth of the matter. The merit of Peruvian civilization was precisely that it acted with full effectiveness, as a teacher of technology and civilized arts, on the other peoples of the Andean region; it is sufficient to recall, in the economic domain, their system of agricultural terracing. But this took place in what may be called the "second epoch" of the history of the Andes, when the germinal ideas that had penetrated through various channels into the Peruvian core had already brought about the highly specialized developments discussed in the foregoing descriptions of types and styles. The error in evaluation that misled the partisans of both the outward- and the inward-migration theories consisted in supposing that the accomplishments revealed by Peruvian archaeology were engendered through a single process. The endogenists assumed a pure and simple process of creation *in loco* and *ex nihilo*, whereas the exogenists assumed the introduction from outside of already-developed techniques that were superimposed upon the customs of an artless people. On the contrary, there is no doubt that, prior to the cultural renewal brought about by contact with more mature civilizations, which acted as powerful ferments, the Peruvian peoples formed part of a larger and more uniform group whose culture covered almost the entire Andean zone. This culture, based on irrigation, already possessed an important heritage of instruments, crafts, and religious beliefs. Although the "second epoch" did unquestionably bring about a cultural enrichment, it also introduced inequalities of benefits because of the differing degrees of receptivity of the various peoples, thus disturbing the original balance.

It is doubtless difficult to produce "archaeological" proofs of this ancient "pan-Andean" stage, but it is not absolutely impossible. It is sufficient to consider the vases, which, although still utilitarian, already have forms and decorative patterns that reveal an incipient though rustic esthetic sensitivity. An abundant harvest of this pottery can still be gathered in the valleys of Colombia and Ecuador, in the desert of Atacama, in the outer fringes of Bolivia, in the gorge of Humahuaca — in short, in the places where the inroads of new fashions came in attenuated form or not at all. Even more eloquent, perhaps, than the pottery findings are the conclusions that may be gleaned from the anthropomorphic terra-cotta figurines of the so-called "archaic horizon." On Peruvian soil, too, there was no lack of either.

With regard to the central Andean nucleus, Peru, a centrifugal diffusion of civilized influences took place in the effects of the "second epoch," which constituted the outstanding cultural phenomenon of South America. But a contrary movement, a centripetal one, also occurred, cultural elements penetrating the nucleus from all sides. Among the routes that may be most clearly documented was the one passing between the

two snow-capped mountain chains, through which came stone sculpture and other arts. A second route also descended from the north, along the seaboard, bringing, through Ecuadorian *tolas*, the art of building mounds and pyramids and of working metals, with the exception of bronze. A third route, the landing places on the seaboard, made possible the direct importation of advanced concepts of cosmology, together with the colored and ornamental plastic arts of Middle America. Nor did the approaches from the south remain idle. Through them came the techniques of roofing with stone slabs, of alloying copper with tin, and of parallelepiped and equiangular masonry; these skills, and architecture in general, traveled down from the heights around Lake Titicaca, where they originated. Some handicrafts, such as the decorative use of varicolored bird feathers, customs of the chase, and games typical of forest people, reached Peru even from the Amazon basin, penetrating the Andean passes through the river valleys.

The highest art forms of the Andean civilization were, however, developed in Peruvian territory. The technique of corbeling appears to have been quite widespread in the southern part of the Inca empire. It was from this technique that the Colla people achieved almost unwittingly the formal invention of the dome and of the pointed arch. The pillar is quite common, either plain or adorned with sculptures, as at Hatuncolla, or hollow as in the interior of the kulpi. The buildings described earlier, including the Cyclopean walls, constitute surprising architectural achievements for peoples who did not have drays or draft animals or iron tools; and we have already noted the excellent quality of their embroidery and of the textiles made on their primitive looms, their accomplishments in metallurgy, and their skill and artistry in pottery making, even without the help of a potter's wheel. Every aspect of their craftsmanship makes apparent the truth of the apt phrase of the jurist Antonio de León Pinelo in remarking that the Peruvians were ignorant of the easy crafts but successful in the difficult ones. This observation was repeated in our day by Horkheimer when he said the Peruvian possessed fewer basic inventions than other ancient peoples of a similar level of civilization but that in compensation they exploited to the fullest degree the few they had.

Many chronological schemes have been elaborated in attempts to systematize the various phases of Andean civilization in relation to specific periods, and the differences between one estimate and another are so huge and arbitrary as to expose at once the weakness of such evaluation. For a long time, the tendency prevailed to lengthen the epochs to the point of propounding fantastic periods of antiquity. But more recently a wholesome reaction has become increasingly apparent, induced certainly by the revisions that became necessary in period estimates of the other regions of the world (China, Mesopotamia, and especially Egypt), which had the effect of shortening dates that romantic tastes had preferred to place in the dawn of prehistory. Thus, the 13,000 years of Posnansky and the two or three millennia that were articles of faith for the Peruvianists of the past generation have given way to more sober estimates of the beginning date — the year 0, that of the birth of Christ, by Olson, and A.D. 400 by Bennett (see *AMERICAN CULTURES*). Tello placed his "first age" at about the year 0, the second between 0 and A.D. 800, the third from 800 to 1321, and the fourth from 1321 to the arrival of the Spanish in 1532. The figures published in the second edition of Libby's *Radio-carbon Dating* (1955) would appear to confirm Tello's table, but they are based on very few tests — one from Moche, one from the Virú Valley, one from the Paracas Necropolis, and two from Nazca. Kroeber wisely concludes that Tello's figures would seem to be the best guess yet made, even though Kroeber is inclined to shorten the epochs further by placing the Chavín cycle at about A.D. 500 and Mochica and Nazca about 700, still in the archaic era. This attribution of dates is quite plausible, and it is furthermore in quite organic accord with the chronological tables accepted today, in a parallel but independent field, for the civilizations of Middle America.

Any attempt to establish an over-all evaluation of Andean art from the standpoint of historical and esthetic criticism

would be arbitrary. It is, however, a valid and important task to identify from among the common work activities those that lead to the creation of forms; and this is what has been attempted here for the various fields of Andean archaeology. But even in formulating such judgments, it is necessary to avoid falling back on the very widespread and much-abused practice of accepting as artistic only those forms that approach our own and to the extent to which the approach is faithful and intense (i.e., the classicist prejudice). And one must also avoid the opposite bias, which, by reaction, leads to overvaluation of the forms that accentuate departures from our esthetic criteria (i.e., exoticism). The problem lies rather in appraising, without preconceived notions and if possible not for the purpose of making comparisons, the forms created by the various peoples in expressing their particular conception of life and of the world, and hence implicitly of beauty. Every civilization contains within it motivations and laws governing creative activity, and its own particular "classicism" lies precisely in the degree to which such activity is integrated with the intimate balance of the civilization.

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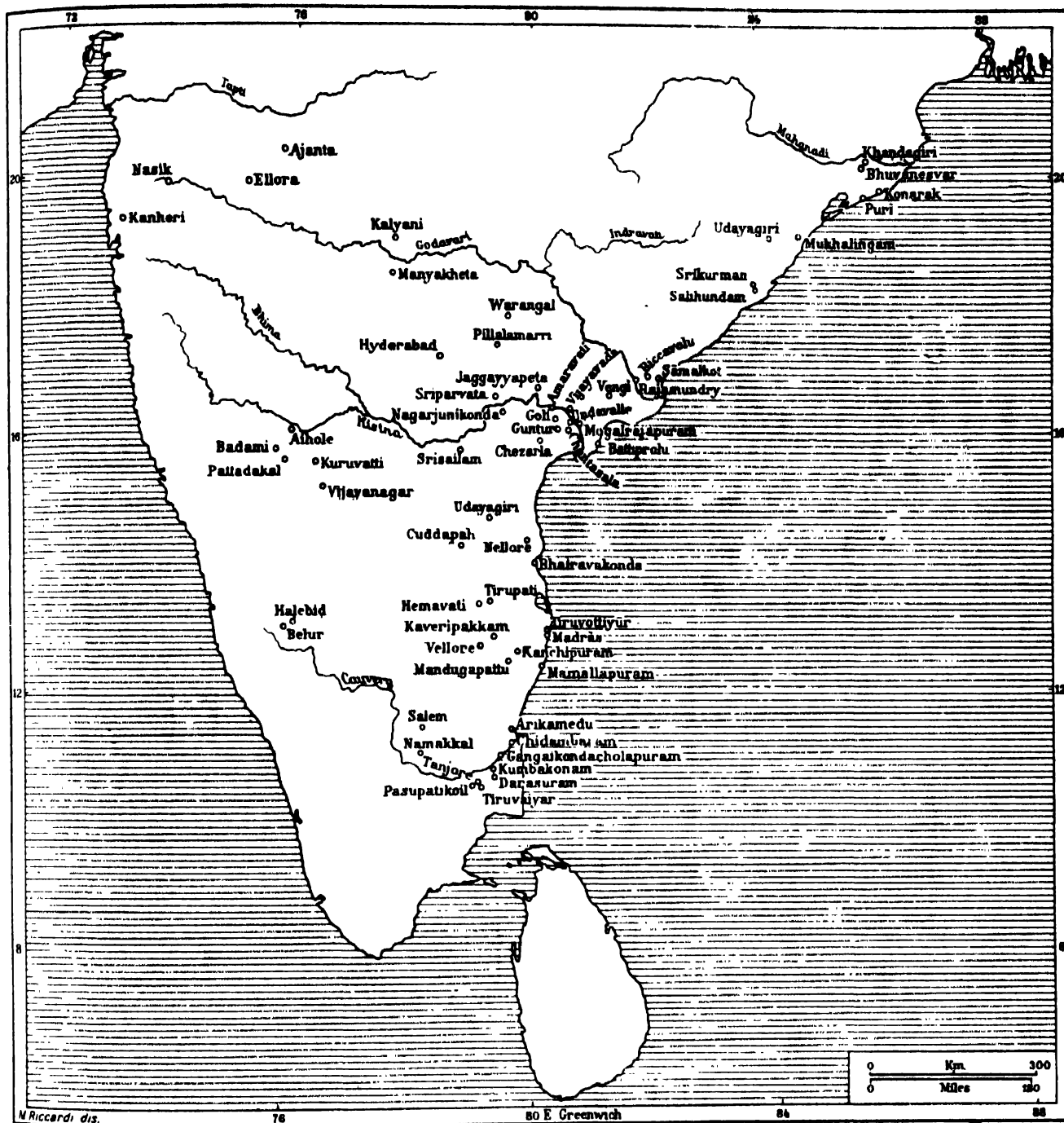
José IMBELLONI

Illustrations: pls. 147-219; 7 figs. in text.

ANDHRA. The word "Andhra" (Skr. *Āndhra*) appears for the first time in the *Aitareya Brāhmaṇa* (VII, 18) as the name of a tribe in southern India about the 7th century B.C. However, in the *Purāṇas* (see for instance *Mārkaṇḍeya Purāṇa*, LVII, 48-49) it appears as the name of a dynasty that ruled over the regions of the lower Godavari and Kistna and over the coastal zone between the mouths of these two rivers. But in the form "Āndhrabṛtya" the name seems also to refer to an empire that originated in what is now Paithan and was created by a dynasty that in inscriptions called itself "Śātavāhana" (or Śātavāhana, Śātakarpi, etc.); in classical literature the references we find on the "Ἀνδρεῖς" refer to this group.

The empire of the Śātavāhanas was one of the greatest in India after the collapse of the Maurya. It extended from the coasts of the Arabian Sea to the Bay of Bengal and comprised the entire valleys of the Kistna and the Godavari and even beyond, spreading in the 2d century as far as the Narbada. Thus the Andhra area, in terms of art history, does not altogether coincide with modern Andhra, the capital of which is Hyderabad.

The end of the Śātavāhana dynasty, between the 3d and 4th centuries, caused these territories to break up into smaller dominions: the Vākāṭaka to the west, the Ikṣvāku to the east,



Centers from which the art of Andhra spread.

as well as many others. The culture of the Sātavāhanas, however, gave rise to an artistic tradition of considerable persistence, which continued through the subsequent political subdivisions and greatly influenced the Middle Ages in India because of its endurance in various regions (see INDIA). It is therefore legitimate to discuss under the term "Andhra," not simply the art of the Andhra dynasty, or the Sātavāhanas, and their immediate successors, but the various trends that evolved in this region (including Chalukya, Kākattya, Vijayanāgar, and others) until, after the first half of the 16th century, the art fell into decay.

Representational art in the Andhra area reached its highest perfection around the 2d century in the sculptures at Amaravati, which are unsurpassed in Buddhist art as narrative representations, and in the great cycles of Ajanta, painted somewhat later under the Vākātakas. This area not only contributed

greatly to the evolution of esthetics in India, but made its effect felt throughout Asia and especially in the Indianized territories east of the Bay of Bengal and in the great islands to the south. The spread of Buddhism, the blossoming in Asia of what might be called "Buddhist humanism," served to carry into remote lands the artistic tradition that had been born of the religious zeal in the Andhra region.

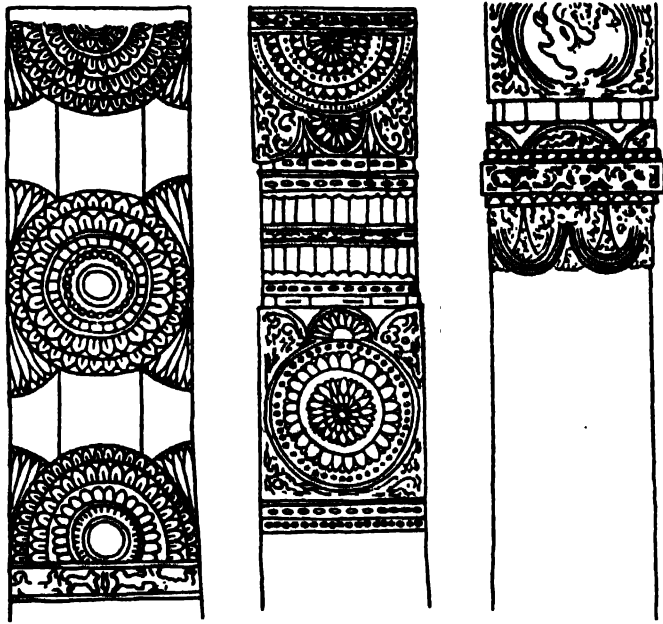
SUMMARY. Architecture (col. 402). Sculpture (col. 411). Painting (col. 418).

ARCHITECTURE. The earliest specimens of architecture and art in the Andhra area, though not essentially different from those of their kind elsewhere in India, are nonetheless characterized by some special features. For example, the stupa

(Skr. *stūpa*) at Sanchi differs in some respects from that at Bharhut to the northeast and from those farther south, and the stupas of the Sātavāhana period in the Kistna Valley gave rise to the style of later ones, as for instance, those constructed (or reconstructed) at Nagarjunakonda by the pious princesses of the Ikṣvāku royal family.

The first period of Andhra architecture, under the powerful Sātavāhana dynasty, is notably represented by the magnificent cave temples of western India, and, toward the east, by the stupa at Amaravati.

The cave temples in western India, for example those at Karli, Bhaja, Kondane, Bedse, Nasik, and Ajanta, are of two distinct architectural types: the apsidal chaitya (Skr. *caitya*) halls and the viharas (Skr. *vihāra*, monastery); the chaityas



Variations of the lotus medallion from the balustrade at Amaravati.

have at the farthest end near the apse a stupa of the *uddetiha* type. The earliest of these cave structures are represented by both simple and storied examples with arches and lattice windows. The supporting pillars and pilasters are crowned by capitals decorated with animal figures such as elephants, lions, and horses, sometimes winged and carrying riders.

The Nasik cave, for example, shows the motif of the atlantes, figures of burly tritons which serve to support the whole structure at the bottom. They recall the description of the demon Rāvaṇa on the island of Lanka: "vahanti yam kuṇḍalaśobhitānā mahāśanā vyomacarā nīśacharāḥ" ([the palace] supported by demons whose heads are adorned with Kuṇḍala earrings). The pillars and pilasters are in some cases decorated with lovely figures of damsels recalling Vālmiki's lines, "nāri-pravekair iva dipyamānam" (as though dazzling with the most beautiful of women). Rows of geese with lotus stalks in their beaks form another favorite design in these earlier structures, recalling the line in the *Rāmāyaṇa*, "haṃsapravekair iva vāhyamānam" (as though borne by the most beautiful of swans); it is interesting that this motif of geese in a row has continued during the centuries as a typical architectural ornament. The pillars and pilasters are decorated with quaint animals of fancy described by Vālmiki as *ihāmṛga*, which are appropriately shown with the hindquarters of fish when they are carved at the bottom and as winged animals when on the capital of the pillar. Such fanciful animals as elephant-fish and horse-fish (*mātāṅganakra* or *gajavakrajhaṣa* and *vājimīna*) are accurate representations in plastic form of those described in early literature. The patterns of the *jālavatāṇas* (lattice windows)

found in the western caves at Kondane are excellent examples of those described in the *Rāmāyaṇa* and *Mahābhārata*.

In various of these western caves, at Karli, Kondane, and Ajanta, the chaityas and viharas are beautifully preserved and every detail can be studied. This is not the case with the ruins in the eastern part of the empire of the Sātavāhanas, but to have a clearer picture of their architectural importance, we have only to turn to the more complete examples preserved in the caves of the west.

The cave at Guntupalle, near Vijayavada, is an early example of the Sātavāhana period. Its façade, showing the arched roof, finds its prototype in the simple monastic cell of the Mauryan period from the Barabar hills.

Remains of fine examples of later chaityas are found in Nagarjunakonda. These later chaityas were not different in plan from the earlier rock-cut ones at Karli and other western caves. The appearance of the façade and the curvilinear top can be reconstructed from the inner contour of the rock-cut examples, or from the general appearance of similar later Hindu temples for which these early chaityas were the model. The plan of the chaitya was apsidal, and toward the farther end of the apse there was a small votive stupa for adoration. The approach of the chaitya, as in the case of large stupas, consisted of a flight of steps starting with a moon stone.

The foundations of viharas also have been laid bare by excavation at Nagarjunakonda. They were composed of a number of cells for monks arranged all around a rectangular courtyard and, according to representations in sculpture, were storied. The approach to the cells and some of the entrances had small steps with a moon stone, flanked by low *makara* (fish monster) balustrades. At Nagarjunakonda there are also many fallen pillars in rows where once a hall stood. This is one of the earliest halls in south India, which abounds in temples in the later centuries, some of them being even thousand-pillared.

Among the many missionaries that the emperor Aśoka sent far and wide for the propagation of Buddhism, one was for Andhra, and the enthusiasm for the new faith resulted in the erection of numerous stupas there. In fact, in south India there is no other region so rich in Buddhist monuments as Andhra, and especially the Kistna Valley. The stupa at Amaravati, which enshrined a fragment of Buddha's relic, was probably one of many that Aśoka erected all over the land.

The stupa at Amaravati, in the eastern seat of the Sātavāhanas, was a simple structure, later elaborated with a great railing (see below). It comprised a low cylindrical drum with a platform on the top edge and four rectangular projections at the cardinal points. The hemispherical top of the drum was crowned by a cubical structure shaded by one or more umbrellas. The cubical member, known as the *harmikā*, marked the spot where deep down was placed the reliquary containing the sacred objects.

The style of the stupas that developed in the Kistna Valley was unique. It is clear from the plan that they had two concentric circular walls, the entire space between these walls being filled with earth. The outer surface of the wall was decorated with carved marble slabs. The hemispherical top was partially decorated with lime-and-mortar work. The four rectangular projections at the cardinal points each supported five large pillars called *āyakkhambha*. The *āyaka* pillars, the *āyaka* platforms supporting them, and the simple gateways guarded by lions are features of stupas in the Andhra country not found elsewhere. The circumambulatory passage (*pradakṣiṇā*) between the stupa and the rail was approached by steps near the gateways, beginning with a semicircular moon stone, gaily decorated with bands of beautifully fashioned animal and creeper designs. These moon stones at Amaravati, Nagarjunakonda, and other places recall similar ones adorning the approach of stupas in Ceylon, and we know from inscriptions at Nagarjunakonda that there was ample opportunity for influences to and from Ceylon.

The earliest form of the stupa, as we can see from representations found in carvings at Amaravati, was very simple. The structure was not high, and it had no elaborate arrangement of the platform all around nor projections facing the

cardinal points. Where decorative medallions were later used, it had *nāgadanta* pegs for arranging wreaths at regular intervals all around the wall within reach of the hand of the devotee. The *harmikā* was also absent. The rail was very simple and was made of wood.

It was from this wooden rail that the stone rail was developed, simple at first, as at Sanchi, and later carved in a more elaborate fashion. The rail at Amaravati is one of the masterpieces of art, in which the simpler form was elaborated and decorated to the fullest possible extent. The lotus medallions at Mathura, Bodhgaya, and Bharhut cannot compare with those carved on this rail; nor can the garlands or their bearers in Gandhara or Mathura be said to approach those from Amaravati for sheer delicacy of delineation and magnificence of execution (FIG. 403). The motif of the garland bearers, perfected in Amaravati, was continued in Pallava structures and traveled beyond India to find a place even in Javanese architecture, where in some of the chandis (Jav. *canḍ*) it is beautifully executed. Similarly, it should be remembered that the lion as the guardian of the gateway, which we find as a characteristic feature in the Andhra stupas, at Amaravati and elsewhere, continued in medieval lion gateways (*siṃha-dvāra*) in Kalinga times and later even in far-off Burma and Java.

Both from literature and from sculptural representations at Amaravati, we know that storied buildings were in existence at this time; and a carving from Amaravati shows structural buildings with as many as six stories. The *Rāmāyaṇa* describes palaces in Lanka with seven or eight stories.

Secular buildings of this period are unfortunately not preserved and actual examples are wanting, though some idea of early palaces can be formed by a study of carved representations in Amaravati, Nagarjunakonda, and other places. These buildings were storied and gorgeous. The windows were of various types, including an arched form with finial, as well as rectangular and latticed forms. Different kinds of balustrades are known, with pilasters and polygonal pillars having fine capitals, some on the model of the earlier bell-shaped type with the *kalasa* motif (sacred vase of ambrosia) at the base. The roof sometimes followed the shape of a wagon hood, sometimes that of a simple rectangular hut, the types being known as the *śālā* and the *kūṭāgāra*. Both are known and described in early accounts of pillars. The use of terraces and balconies is also known from representations in sculpture; some were open and others canopied, the latter being known as *valabhi*. In literary accounts these *valabhis* were described as decorated with ivory and termed *dantavalabhikā*. There were separate entrances and exits with fine decorations on the arched toranas (Skr. *torana*, gateway) as in the case of the Sanchi gateways, which were decorated with fresh garlands for great occasions.

The palace in the Sātavāhana period was, no doubt, a complex structure, being the principal building in the city. The city itself had elaborate defense walls (*prākāra*) and was surrounded by a water-filled moat bearing lotuses. Representations of the city wall with its moat, as in sculptures from Sanchi, remind us of the literary description in the *Rāmāyaṇa* in the passages pertaining to Lanka. The city gateways were very elaborate and could easily allow the free passage of the huge elephants from the stables of the sovereign. Sculptures from Amaravati beautifully illustrate these features. In city gateways there was provision for housing military sentries — a feature described fully in Kauṭilya's *Arthaśāstra*.

The art traditions of the Sātavāhanas were continued in later developments, one in the western Deccan and the other in the east. Toward the west, the Vākāṭaka caves at Ajanta, with the finest floral designs and sculptures, show the impact of Gupta art on something which was fundamentally derived from later Sātavāhana, and these traditions further persisted in the earliest Chalukya (Skr. *Chalukya*) temples from Badami and Aihole.

An analysis of the style of pillars, or pilasters, may be used to illustrate the persistence of Sātavāhana traditions. The pilasters from the cave of Gautamiputra Śātakarṇi at Nasik are exactly like the upright arched Buddhist stupa rails in the Kistna Valley. The decoration on these pilasters can clearly

be traced in somewhat modified form in the richly ornamented pillars of the caves at Ajanta. The full and half lotus medallion with half-open buds spread fanwise on the side provides an arrangement in which a large central arch is flanked by two smaller ones. This arrangement recurs on the Ajanta pillar, with the flanking arches developing greater curvature. The tripartite flutes of the Sātavāhana period multiply in the pillar at Ajanta.

In early western Chalukya, the square-sectioned pillars from the Vaishnava cave at Badami continue the triple arc and fluting, while motifs such as *makara* or ox or buffalo with floriated hindquarters are introduced in medallions after similar Vākāṭaka motifs at Ajanta. The bracket figures on the pillars in the Badami caves are the precursors of similar examples in all temples with Chalukya influence, such as those of the Rāṣṭrakūṭa dynasty in the Ellora caves, the later Chalukya ones at Kuruvatti and other places, the Hoysāla ones at Halebid, Vellore, and elsewhere, and the Kākatiya ones at Warangal, Palampet, and other places in Andhra. (Similarly, the rich ceiling carvings showing the *dikpālakas* or guardians of the four directions, lotus patterns, etc., so characteristic in later Chalukya temples and those inspired by this school, find their source in the lovely ceiling carvings in the Vaishnava caves at Badami.)

A similar history can be traced for the chaitya window. The simplest type is found in the early Sātavāhana caves and other monuments. Angular outer additions at the base and tendril-like projections toward the top are developed in the Gupta-Vākāṭaka caves at Ajanta; in the semicircular steps between the chaitya windows here (and in later phases) is found a lovely human head. In the Badami caves the chaitya window is more developed but is clearly based on the one in Ajanta; the angular basal projections develop into *makara* heads without any change of the contour, and the tendril-like decorations on either side of the top continue.

In the east, another development of both the pillar and the chaitya window may be seen in the Viṣṇukunḍin and the early Pallava caves. The top of the chaitya window is shaped like a shovel-head and the side decorations are floral patterns. The continuation of this element, with the development of the *makara* head on either side nearer the shovel-head top, becomes characteristic of the chaitya window of the eastern Chalukya temples in the Andhra area, whose inspiration was mainly from the western Chalukya with admixture of both Pallava and Kalinga elements. The type of pillar developed in the east is square in section halfway up from the base and circular above, with fluted conicylindrical and bulbous parts beneath a fluted corbel with central band. The elements of this pillar, shaft and corbel, are repeated with some modification in early Pallava caves.

Two Hindu temples based on Buddhist chaitya models are of supreme importance in understanding the later development of south Indian architecture — the temple at Chezaria devoted to Kapoteśvara, constructed by the kings of Anandagotra in the 4th century, and the temple of the goddess Durgā at Aihole (6th century). The Chezaria temple is one of the most interesting monuments in the Andhra area. It is the earliest Hindu temple in apsidal form, an inspiration derived from such chaityas as those at Nagarjunakonda. This architectural type is called "vimana" (Skr. *vimāna*). The façade is shaped like a huge chaitya arch and the curved roof slopes downward at the rear to take on a hemispherical shape. It is not unlikely that the Pallava workmen copied the apsidal temple from Chezaria when they built the monolithic ratha (temple) group at Mammallapuram; we know that Mahendravarman, the art-minded Pallava king and maternal grandson of Vikramahendra, the Viṣṇukunḍin king of the Kistna Valley, brought Andhra traditions of rock-cut temples into his own kingdom of Kanchi.

As is well known, the apsidal Durgā temple at Aihole (PL. 220) is the earliest Hindu temple in western India after the Buddhist chaitya model. The decorated high base of this temple is the prototype of the later, higher, and very richly decorated bases of temples in Chalukya style, with definite bands of decoration as in the earlier parent. The temples of

the Kākatiya period are also rich in decoration arranged in this way, and their sculptors drew abundantly from the earlier Chalukya traditions. Aihole is the meeting place of both southern and northern elements, and the early Chalukya temple has characteristic patterns of the niche, the pillar, the corbel, the pavilion with predominant vertical lines of the vimana, and the amalaka (that is, the top in the shape of a round pillow, from the name of a fruit, Skr. *āmalaka*, the emblematic myrobalan), which tell a definite story in the development of architecture in Andhra.

The architecture of the Vākātakas, mentioned above in connection with Ajanta, should be studied also against the background of their relationship by marriage with the Viṣṇukunḍins and, earlier still, the occurrence of the name "Vākāṭaka" in inscriptions from Amaravati of the 2d or 3d century, which point to their original home in the Kistna Valley. Triple cells, rectangular in plan, immediately adjoining a central hall, with a definite arrangement of pillars and pilasters and sculptured panels on the walls at either end, are a feature common to similar early temples of the Viṣṇukunḍins and of the earliest Pallava, as at Tiruchirapalli, Mandagapattu, Dalavanur, etc.

The architecture of the Viṣṇukunḍins, about the 5th to 6th century, as understood from the caves excavated in the living rock at Mogalrajapuram and Undavalle in and around Vijayavada, is comparatively simple. The façades at Mogalrajapuram show two pillars in the center, two pilasters (one on either side), and a *dvārapālaka* (guardian of the door) at the extreme end beside each of the two pilasters. The pillars and pilasters are simple and massive, square in section at the base and top and octagonal in the central part. The corbels are rounded on either end and, judging from the less weathered ones, fluted. Directly above the pillars are chaitya windows with heads introduced in them. Floral designs flanking the chaitya windows and shovel-heads on top are forerunners of similar patterns in Pallava and later eastern Chalukya chaitya windows. Above this is sometimes a row of animals spiritedly carved. On entry the caves present a veranda, with or without an additional row of pillars, beyond which is a single cell or triple cell forming the sanctuary. The Undavalle caves are storied and have the same or an increasing number of pillars in each story. Steps lead on from one story to another. Couchant lions guard the entrance of the caves in the second story. On the front of the roof of the second story are carved pavilions, and in the third story there are slender pilasters carved in low relief, which contrast with the massive ones in the first story, similar to those at Mogalrajapuram. On the ground floor the pillars are still more heavy and plain.

From the 7th century the eastern Chalukyas under Kubja Viṣṇuvardhana established their power in Andhra with Vengi as their capital. Vijayavada was one of their important cities, and there are still several vestiges of early eastern Chalukya architecture in this town. The magnificent proportions of early eastern Chalukya temples can be imagined by a look at the colossal *dvārapālas*, of which a magnificent pair is now preserved in the Madras Government Museum. These figures are in the style of the sculpture at Badami, in the Chalukya homeland in the west, and judging from this, the earlier phase of architecture should have been similar.

In the Jāmidoddi in Vijayavada the beautifully carved capitals of the pillars of the mandapa (Skr. *maṇḍapa*, porch) give a good picture of the type prevalent in the early centuries of the eastern Chalukya rulers. These capitals, with seated lions at the corner on either side of the central projections, are full of life and closely resemble similar carvings with western Chalukya and Rāṣṭrakūṭa influence, as for instance from Kaveripakkam, where the corbels are carved with spirited figures of dancers and warriors. The next stage in the development of these pillars is to be noticed in the Bhīrmeśvara temples at Draksarāma and at Bhimavaran near Samalkot, where rows of dancers are introduced in the *hallisālāya* attitude striking small wooden rods (see below).

The beginning of the attractive *surasundarī* bracket figures in Chalukya sculpture should be sought, as noted above, in the Badami caves. The tradition is continued through the

centuries, and some of the magnificent figures of this type are from later Chalukya temples, as at Kuruvatti and elsewhere. In the Hoysāla temples at Vellore and Halebid, inspired by Chalukya traditions, these figures add charm to the general scheme of architecture. In Draksarāma this feature, though not very prominent, shows that eastern Chalukya architecture and sculpture draw their inspirations from the parent home.

Of somewhat earlier date are the temples at the village of Biccavolu, midway between Samalkot and Rajahmundry, which form, as it were, the only important group almost completely intact to give us a fair picture of eastern Chalukya temple architecture. One of these temples, which stands in the field, is larger than the others. The only carving here is of the *dvārapālas* on the doorjamba and Lakṣmī (Ang. Lakshmi) on the lintel, but from the point of view of architecture this temple is very interesting. It shows that the eastern Chalukya temple structure follows the Dravidian type inspired by southern traditions. The vimana here brings to mind the Pallava type, which was the main source of inspiration even for the group at Pattadakal and the famous Rāṣṭrakūṭa monuments at Ellora. In characteristic form, one of the *dvārapālas* has his hip twisted in the *prsthavastika* attitude, while the other stands at ease with one leg crossing the other, and, like his companion, resting on his huge club.

A little away from this and rather close to the village stands another temple in a bad state of preservation. This temple has several figures constituting valuable material for the study of architectural motifs and sculpture of the period. The three large niches have figures of deities and *makara* decoration on the top. On the tiers above are several figures representing individual iconographic forms and the *mithuna* motif (male and female figures symbolizing lovers, the so-called amorous couples). The doorway of this temple (PL. 226) has a unique feature that is absent in other temples of the period in this area: it presents the river goddesses Gaṅgā and Yamunā (Jamuna) on either side.

The use of Gaṅgā and Yamunā as guardians of the door, a feature common in Gupta temples, was (along with the *pālidhvaja* panel, the protective emblem) a symbol of sovereignty in the territory between the Ganges and the Jamuna. It was won by the western Chalukya king Vikramāditya of Badami, through his son Vijayāditya (who led an expedition to north India and returned victorious) and was later inherited by the Rāṣṭrakūṭas, the political successors of the early western Chalukyas. The eastern Chalukyas were eternally at feud with the Rāṣṭrakūṭas, and one of their kings, Guṇaga Vijayāditya — to whom, according to the inscription, even the Rāṣṭrakūṭa king Vallabha paid homage — won the symbol of the rivers Ganges and Jamuna and the banner *pālidhvaja* from the Rāṣṭrakūṭas. This fact, gathered from the Sātālur grant of Guṇaga Vijayāditya, is architecturally borne out by the introduction of these symbols into this temple, which may be assigned to the time of this king.

The Gaṇeśa images on the tiers of the vimana of this temple have only a single pair of arms, a feature observed not only in earlier carvings of Gaṇeśa, in eastern and western Chalukya territory, but even on the seal of the Sātālur grant. The *makara* figures on this seal look exactly like those on the toranas and on the horseshoe-shaped *kūḍu* arches in these temples. The presence of these *makara* heads on the arch of the *kūḍu* on either side of the shovel-head above is a feature to be noted in the eastern Chalukya temple of this period.

Somewhat separately situated on the outskirts of the village is yet another temple closely similar to the one just described, with niches on the three sides ornamented with *makara* decoration. Though the *sikhara* (Skr. *śikhara*, a sort of turreted covering) of the temple is unfortunately ruined, this temple offers rich material for the study of architectural motifs in eastern Chalukya art. The *makara-torana* decoration (an arched motif with fish monsters) on the niche, closely resembling the southern type seen at Kanchipuram in the Kailāsanātha temple, shows on either side the floriated tail of the *makara* with dwarf (*gaṇa*) rider, the arch issuing from and meeting the mouth of the *makara* on either side, and a rearing lion near the curled snout of each of the two *makaras*. The small carved central

projection immediately above the lintel of the niche is also very characteristic. These features recall similar decoration in the temples of Rājāsīmha at Kanchipuram and the Chalukya ones at Pattadakal in the homeland. The *kūḍu* is characterized by a greater profusion of the elements of *mākara* decoration than similar *kūḍus* from the Kanarese or Tamil districts.

Complete figures are shown in the *kūḍu*, rather than the peeping heads of earlier Pallava and Chalukya counterparts. The row of *vyāla* busts (predatory beasts, snakes) is also characteristic here of the motif in the south. Particularly noteworthy are the *mithuna* figures on the tiers that recall similar motifs from temples in Orissa, and the reason for this is easily traced from the history of the connection between the eastern Chalukyas and the Kalingas. It may be recalled that Guṇaga Vijayāditya was the overlord of Kalinga, and the Gaṇeśa figure with a single pair of arms on the tiers of the vimana here resembles the figure in the Sātalur grant. The row of geese on the eaves is another motif which resembles a similar one at Mamallapuram. The temple itself is in the southern style, with several elements suggesting northern influence through Orissa.

A group of three temples in the village dedicated to Śiva (Ang. Shiva) also belong to this period, that is, the time of the king Guṇaga Vijayāditya or slightly later. The central one, the temple of Golingeśvara, has a wealth of iconographic material; in its niches all around and between pilasters there are several figures of such deities as Sūrya, Viṣṇu (Ang. Vishnu), Vāyu, and Agni. Some of the figures composing the *mithuna* motifs and the *surasundarī* in the *kūḍu*, depicted in three-quarter view like the one from the vimana of the Golingeśvara temple, remind us at once of Orissan figures and also of those from Khajuraho. The *mākara-torana* arch over the niche is beautifully fashioned in every case in this group of temples and can be compared with similar ornamentation in the early Pallava temples at Kanchipuram, as in the Kailāsanātha temple. The next stage of this decorative niche top (which evolved from the early Amaravati period, as already pointed out) may be established by comparing the Pallava style of Mahendravarman's time, which retains close similarity with eastern Chalukya features, as described above: the floriated tail, the gaping mouth and curled snout of the *mākara* with prancing lion close to it, the dwarf rider on its neck, the arch issuing from its mouth, the central knoblike projection, etc. (FIG. 410).

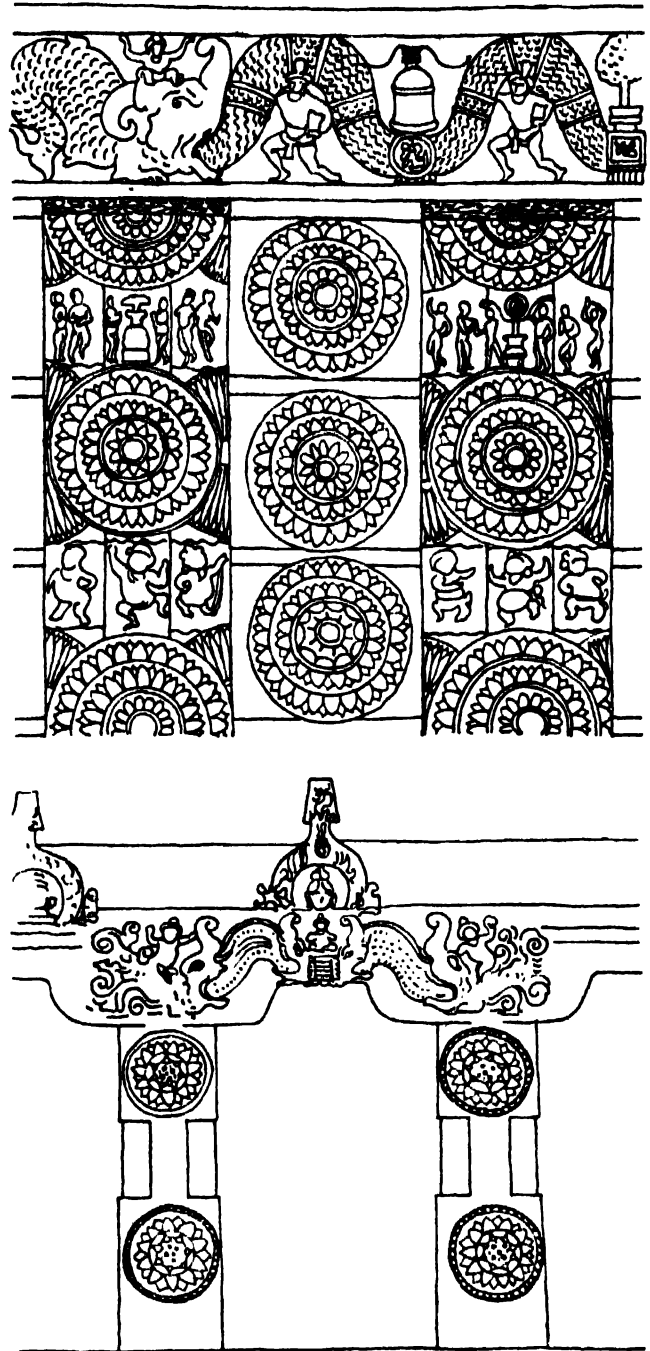
Chalukya Bhīma was responsible for the famous shrine at Draksarama in the Godavari delta, named Bhīmeśvara after the king, and for another built in Bhimavaran near Samalkot. In both of these, there is a miniature model of a temple. The architect prepared this tiny shrine to give the king an idea of the structure as it would look when finished. This is almost a *varṇaka*, a sample of the larger structure to come, as in the verse in the *Kuṭṭanimata* — "tribhuvana-pura-nispādana-kaśālam iva pṛcchato Virincasya / darśayitum nijaśilpam varṇakam iva Viśvakarmanā racitam," (asked by Brahma whether he could build the city of the three-world universe, Viśvakarma, architect of the gods, made a model to prove his skill).

The pillars of these two Bhīmeśvara temples illustrate musicians and dancers; the latter are divided into pairs and strike small wooden rods which they hold in their hands to keep time with as they sway their limbs in dance movement. These carvings reflect the great appreciation of music and dance during the period, and suggest a folk-dance motif more profusely introduced a few centuries later in Vijayanagar sculpture.

Much-worn miniature bracket figures, noticeable on entering the temple at Draksarama, show that in eastern Chalukya territory the western Chalukya tradition of the bracket figures of *surasundarī*, found in profusion from the time of the Badami caves till the late medieval period not only in later western Chalukya but also in Hoysāla and Kākatīya temples, is not altogether forgotten. The mandapa in the tank, the water pavilion for the festival of the barge in spring, shows the affinity of the eastern Chalukya temple with those from south India.

The Kākatīyas, who were the political successors of the Chalukyas in the Andhra country, left several temples that show the continuance of earlier traditions. In a very characteristic manner the Kākatīya temples are built on a raised base,

with highly polished and decorative pillars, exquisitely worked ceilings, and small parapets with decorative latticework all around the mandapas. The torana decoration in Kākatīya architecture closely resembles the northwestern Chalukya traditions, and the toranas recovered from Warangal remind us of similar



Variations of the *mākara* motif.

ones at Dabhoi near Baroda. The slender and elongated figures of dancers and musicians, though recalling Chalukya and Hoysāla prototypes, have their own special characteristics. The ceiling of the Kākatīya temple is especially rich in decorative work. The *amṛtamanthana* (preparation of ambrosia) and other scenes from the *Rāmāyaṇa* and the *Mahābhārata* are favorite themes for the panels on the sides of the cubical parts of the pillars. Palampet, Warangal, Hanamkonda, Tripurantakam, and other places are noteworthy for their exquisite temples of the Kākatīya period. The temple at Macherla is of this period and there are others at Nagalapad and Pillalamarri.

The Vijayanagar emperors, who continued Chalukya traditions in the earlier decades of their reign, incorporated in later structures the traditions of the Tamil, Kanarese, and Telugu Districts. This admixture was inevitable, as the empire was a prodigious one. The Vidyāśaṅkara temple at Sringeri and even the temple near the river at Tadpatri in Cuddapah District represent the earlier phase of Vijayanagar work, where Chalukya traces still predominate. But as time passed, the predominant note in Vijayanagar temples became more and more Tamil, and thus huge towers, as at Chidambaram and Tiruvannamalai, and mandapas with hundreds of pillars came into prominence. At Hampi, the seat of the Vijayanagar empire, the temples built by Kṛṣṇadevarāja are predominantly in this style. In the Viṭṭhala temple the pillared hall is beautifully executed and the monolithic ratha closely follows a similar one in the Tadpatri temple. The Kalyāna mandapa of about the same period at Vellore is one of the most beautiful structures of the Vijayanagar period. Many of the large gopuras (towered gateways) in south India were created by Kṛṣṇadevarāja, the most distinguished emperor of the Vijayanagar dynasty, and they are still known as "Rāyala gopuras." It is in the Vijayanagar period that several courts with colossal towers in the shape of gopuras were added to earlier temples in the south; at Srirangam a huge, unfinished tower of this period stands in the seventh courtyard, the outmost.

Fortunately several palaces of the Vijayanagar and Nāyaka periods are preserved, at Hampi, Chandragiri (PL. 220), Madura, Tanjore, and other places, to suggest the magnificent royal architecture of the period. At Hampi there are instances of the blend of Indian and Saracen elements, as in the Queen's Bath. The Lotus Mahal is almost entirely Hindu in spirit. The mahal at Tanjore is inspired by traditions of temple architecture on the vimana model, and *prāsāda* means both a royal palace and a temple of a god. Thus the mahal at Chandragiri resembles a triple vimana.

SCULPTURE. The Andhra area has been particularly fortunate in its wealth of stone and marble sculpture. Some examples go back to the Aśoka period, the earliest surviving all over India. In fact, the early examples of sculpture in north India, such as those from Bharhut and Bodhgaya, are paralleled by early sculpture from Amaravati and Jaggayyapeta with striking resemblances. The features, the contour of the face and body, the turbans, the ornaments, the manner of wearing clothes show how closely the art of this period is knit together everywhere in India. This similarity is accounted for not only by the political harmony that was created by Aśoka in his huge empire, which extended far toward the south, but also by the cultural unity he achieved. The Sātavāhana kings, the Śuṅgas, and the Kāliṅgas were all political successors of the Mauryas, and considering their common artistic heritage, this striking similarity is not surprising. Not only do we find resemblances in form, dress, and ornamentation, but we find similar poses and disposition of figures in almost identical scenes, both in sculpture and painting, in the eastern and western parts of the large empire of the Sātavāhanas. Thus, it is interesting to compare sculpture from the Kistna Valley with paintings from Ajanta and with the carvings in the numerous early caves of western India.

Every mound on the banks of the Kistna has buried within it a stupa with fine carvings waiting to be laid bare by the spade of the archaeologist. Amaravati, Nagarjunakonda, Goli, Gummididurru, Jaggayyapeta, Bhattiprolu, Ghantasala are but a few names of places that have revealed fine sculpture from the ruins of the stupas discovered there.

The stupa at Amaravati was beautifully decorated with carvings in marble and was still in a fair state of preservation 150 years ago. Since that time it has suffered serious damage because much of the marble was removed by local builders to make lime mortar, a tragic instance of ignorance and indifference. These carvings can be classified and assigned to four periods. The earliest are of the 1st century B.C. and closely resemble carvings from Bharhut and paintings from Cave X at Ajanta. Those of the second period are of about the 2d century of the Christian era. The third period of art here is represented

by the profuse carvings on the rail which are ascribed to the efforts of the great master Nāgārjuna. The fourth and last phase is dated at the beginning of the 3d century.

In the first period at Amaravati (PL. 221) a remarkable sculpture with an inscription mentioning the name of a yakṣa (Skr. *yakṣa*, divinity of the woods and forests) proves clearly that yakṣa worship was in vogue in the Kistna Valley as well as in central and north India, where many carvings of nagas (Skr. *nāga*, earth and water gods in the form of snakes) and yakṣas with their names inscribed have been discovered. One of the finest carvings of the same time is a scene from Jaggayyapeta representing Māndhātā (PL. 221), one of the yakṣas, causing a rain of coins.

The second period of sculpture is interesting because for the first time here, as in Mathura at about the same time, the figure of Buddha in human form is introduced. In all earlier sculpture this had been scrupulously avoided, and only symbolic representations occurred.

The finest carvings from Amaravati are of the third period; they rank with the best Indian work of any period and are comparable to contemporary Kushan carvings from Mathura. To this period are ascribed the largest number of scenes from the historic life of Buddha or episodes of his previous lives from the Jātakas. The legends chosen for depiction are numerous, including not only the extant Jātakas but other stories, the originals of which unfortunately are not now available, though they are preserved in later recensions such as the *Avadāna-kalpāvatī* of Kāsemendra. Some of the stories from the life of Buddha, and of his contemporaries such as Udayana and Ajātaśatru, as depicted in Amaravati, afford a great deal of interest to the scholar. The high-water mark of artistic ability in the Sātavāhana age is to be seen in these carvings of the third period.

This exuberance of artistic output in Buddhist monuments during the time of the Sātavāhanas does not mean that Hindu institutions were neglected. The Sātavāhanas were followers of the Brahmanical faith and performed many great Vedic sacrifices. The variety of artistic production under their rule reveals their broad spirit of religious tolerance. The famous image of Śiva on the lingam (Skr. *linga*) at Gudimallam, which should be assigned to the 2d century B.C., is a unique piece of early Sātavāhana art and probably one of the most remarkable figures of Śiva, combining Agni and Rudra concepts of Vedic tradition in a figure that closely follows the yakṣa model characteristic of sculpture in north India. This, with the Śiva lingam found at Bhita, is most important for the study of the history of Saivism in its very early phase.

The Ikṣvākus, like the Sātavāhanas, were followers of the Brahmanical faith and performed many sacrifices, but they were equally tolerant, and many princesses from the royal household helped in rearing the monuments of Nagarjunakonda, which are among the most important in Andhra. The carvings of Nagarjunakonda (PL. 223) show a development from the third, or rail, period at Amaravati, being almost contemporary with the fourth or last phase there; though charming, they are not equivalent artistically to sculptures of the third period of Amaravati. The styles of carving at Nagarjunakonda, Goli, and Gummididurru are alike, representing the same phase of development. These carvings are lively, and the themes cover many Jātaka tales and stories from Buddha's last life. As in Amaravati, extraneous motifs are sometimes introduced to enliven the tedium, but always with studied skill. The rail of the stupa, the *dyaka* pillars, and the lion-guarded gateways are all extensively decorated, a special feature of the stupas of Andhra, and the semicircular moon stones at Nagarjunakonda show rows of running animals and creeper patterns.

At the same time there occur other Buddhist monuments farther north near Anaklapalle, where rock-cut figures of Buddha at Sankaram reveal how widely Buddhist influence and art had spread in the Sātavāhana realm.

The fine animal and human terra-cotta figures from Kondapur in Hyderabad and those from Pondicherry discovered by Jouveau-Dubreuil show what the Sātavāhana artists could do with a softer and more malleable medium than stone.

To approximately the same period should be assigned the early bronzes of Buddha discovered at Amaravati, which closely resemble similar ones found in such distant places as Malaya and Borneo. Amaravati, or the Kistna Valley in general, like Mathura in the north, appears to have been a great center of artistic production from which images were sent out to distant places. From the inscriptions at Amaravati it is clear that devotees came from different parts of India and from foreign regions and contributed for the construction of this or that part of a rail or votive stupa. It is quite likely that they also carried mementos away, and thus encouraged artistic production. The ship coins of Yajña Śrī Śātakarṇi prove the existence of great maritime intercourse, which would account for the presence in distant islands of bronze images with striking similarity to the figures of the Amaravati school. For example, we find many features of Amaravati sculpture at Borobudur, in Java, where Pallava traditions of a later day were mostly followed, thanks to the mighty Pallava fleet that restored a Ceylonese king to his throne and carried Indian culture to distant lands. The greatest tribute to this cultural interchange is found in the magnificent representations of naval scenes which occur frequently at Borobudur. In this connection it should not be forgotten that the earliest phase of Pallava sculpture lies nearer to Andhra than to the south.

The next phase of sculpture in Andhra is of the time of the Viṣṇukūṇḍins about the 5th to 6th century (PL. 222). The Undavalle and Mogalrajapuram caves in and around Vijayavada are of this period and represent the sculptor's art before the advent of the Chalukyas. In the Undavalle caves many of the figures have unfortunately been ruined beyond recognition by later modern plastering, but wherever carving can be made out, it shows vigor and skill in the portrayal of both man and animal. In the better-preserved Mogalrajapuram caves we see more of the sculptor's genius. The row of lions and elephants beneath the figure of eight-armed dancing Śiva that crowns the façade of one of the caves is exceedingly realistic, and the faces peeping from within the *kūḍus* are most expressive. The multi-armed figure of Śiva here, even in its mutilated condition, is clearly a great masterpiece of art. This figure combines the traditions of both north and south India, since it has multiple arms — as in the images of Nāṭeśa (Śiva dancing) from central, western, eastern, and north India — and tramples the dwarf Apasmāra, as in later south Indian sculpture. This is an important example for a study of the course of art in places where different traditions meet.

Another such meeting place is the heart of the western Chalukya kingdom near Badami and Pattadakal. The pillars here are carved with scenes which continued to be great favorites in succeeding centuries. For instance, here there are the lifting of Govardhana by Kṛṣṇa, the raising of Pṛthvī (the earth) from the ocean by Varāha, Narasiṃha overcoming Hiraṇyakaśipu, Trivikrama amazing the titan Bali, Liṅgodbhava deifying Viṣṇu and Brahmā (in the form of boar and swan) to appraise his stature, and so forth — scenes which are familiar in the 7th- and 8th-century carvings at Mamallapuram and Ellora respectively, where the themes have been elaborated and more beautifully presented in larger panels. Here, in the small space available on the sides of pillars, the sculptor has done his best, but the chief importance of these carvings lies in their historical connection with earlier works and their influence on later sculptors, not only locally but far away in other kingdoms as well.

This continuity of tradition accounts for the influence of the Gupta panel of Varāha at Udayagiri on similar later panels in distant places such as Badami and Mogalrajapuram, Mamallapuram and Ellora. The representations of Trivikrama follow a similar trend. From Mandor in Rajasthan comes an early depiction of Kṛṣṇa as Govardhana-shara (that is, in the act of raising Govardhana), a theme so popular that there are numerous representations of it both large and small; a large one in the Bhārat Kalā Bhavan may be compared with the one from Mamallapuram in size, while the emphasis on the milking scene recurs in smaller ones in various places. While the human aspect of Kṛṣṇa is portrayed in these scenes of the

Gupta period and at Mamallapuram, his divine aspect is emphasized in Mogalrajapuram, as in later sculptures at Ellora, by giving him an additional pair of arms. The *gopi* (milkmaid) carrying a pile of vessels occurs here as later at Mamallapuram. The horned *dvārapālakas* guarding the gateway in these caves are the precursors of later Pallava examples.

If we accept the theory that the Pallava king Mahendravarman was the grandson of a Viṣṇukūṇḍin king Vikramahendra and take into account the extent of the Pallava empire, which, though ruled from Kanchi, reached even in the time of Sarnu-dragupta into the Kistna Valley, and if we consider the marvel of Mahendravarman's first introduction into the Tamil area of cave temples like those in his maternal grandfather's territory, we can understand the importance of the Mogalrajapuram caves in the developments of the next century.

The intermediate step between the Mogalrajapuram caves and the caves of Mahendravarman, which are distributed in a wide area from Chingleput to Trichinopoly District, may be seen in the cave temples at Bhairavakonda in Nellore District. These cave temples are nearer the Telugu idiom in sculpture than Tamil, while those farther south develop their own individuality. The horned *dvārapālakas* are quite bulky and carry heavy clubs; the carvings of deities (Viṣṇu, etc.) show points of affinity with similar figures farther south; the squatting lions and the couchant Nandi are all, no doubt, similar to corresponding figures in the caves of the Tamil area, but certain characteristic proportions and contours bring them nearer the Andhra school and show their link with later sculpture in that area.

Some interesting carvings in a rather archaic style have been discovered at Peddamudiyaṃ (PL. 224), representing the popular deities such as Brahmā, Viṣṇu, and Śiva, Narasiṃha, Mahiṣamardini (Kālī), and Gaṇeśa. Lakṣmī (goddess of fortune) also appears in this group but as a semisymbol, with her mark, *śrīvatsa* (cornucopia), modified to resemble a peculiar kind of bust by the addition of a head on top and a lotus base. This method of representing Lakṣmī is continued farther south in early Pallava sculpture. We can trace the origins only here. Occasionally Viṣṇu also carries such a figure on his chest in the place of the *śrīvatsa* mark, which after many centuries was ultimately transformed into a triangle. It should be noted that here Gaṇeśa has only a single pair of arms, a feature that is repeated in early Chalukya sculpture; as may be observed in the figure of Gaṇeśa from Bhumara, Gupta figures of the deity also show a single pair of arms. In the north Indian fashion, as observed in Gupta sculptures, Mahiṣamardini is shown with one foot on the buffalo that she is killing, and from the animal issues the demon in human form. The method of representing her on the cut buffalo head is confined to the Tamil area. The fine Śiva group from Madugula should also be assigned to this period (PL. 225).

Two fine pieces of sculpture in the Vijayavada Museum show the advanced skill of the workman, although it is not clear whether they are examples of Viṣṇukūṇḍin sculpture or very early eastern Chalukya. One is an image of Śiva with a single pair of arms holding an ax in one hand and with his Nandi close to him. The other is a broken bust of Kubera with beautiful *mukūṭa* (tiara). To the same period belong some nearly life-size images of Buddha found at Amaravati and elsewhere, including Alluru near Vijayavada, and preserved in the Madras and Vijayavada Museums and at the site at Amaravati.

Early in the 7th century the great western Chalukya king Pulakeśin, who was a born enemy of the Pallavas, seized the northern part of the dominions of Mahendravarman and added to it by conquest, establishing his younger brother Kubja Viṣṇuvardhana as his viceroy. Thus originated the eastern Chalukya line of kings in Andhra territory, and the descendants of Kubja Viṣṇuvardhana beautified their kingdom with fine temples decorated with handsome sculptures.

In the early stages the sculptures of the eastern Chalukyas were colossal and were inspired by western Chalukya traditions. It is interesting to compare these huge monoliths, some of them inscribed, with the colossal figures in the caves of Mangaleśa at Badami. The precedent for huge figures had been set by the Guptas a little earlier, for instance in two rep-

representations of Varāha at Udayagiri and at Eran, both from central India, and in the large panels from Deogarh. This Gupta style accounts for such early medieval monolithic panels as those representing Trivikrama in the Rajivalochana temple at Rajim and Śiva's *mūrtis* (Śiva's various faces) in the Elephanta cave near Bombay. This style captured the hearts of the earliest of the medieval carvers, and thus in Andhra also this tradition is repeated. At Vijayavada were found a number of monolithic sculptures, all in early Chalukya style, some of which are now preserved in the Madras Museum. A pair of *dvārapālakas* of exceptional beauty, both of them real giants, are masterpieces of early eastern Chalukya art that probably adorned a Śiva temple (PL. 222). One is wearing a *yajñopavīta* or garland of lotuses and lilies, and the other a garland with bells suspended from it at intervals. Both wear armlets and ornaments with lion-face decoration, and both have their hands in characteristic *tarjanī* and *vismaya* positions holding a noose and a colossal club. One of these figures is inscribed on the back with the words "Guṇḍaya" and "Vegināthu velandu," giving the personal name Guṇḍaya and referring to his service as the sculptor of the lord of Vengi, the eastern Chalukya king. Two large elephants, which are also from one of the derelict temples, should for their elegance and natural beauty be compared to similar early representations of the animal in the grand relief known as "Arjuna's Penance" at Mamallapuram, a masterpiece of the Pallava sculptor's art. From Vijayavada comes a Gaṇeśa with a single pair of arms which is now in the Madras Museum. There are other *dvārapālakas* of similar execution and other Gaṇeśas still in Vijayavada — all of them fine examples of the grand art of the early Chalukyas. At Vengi itself there is a huge Gaṇeśa lying mutilated. Of this early type of monolithic Gaṇeśa (having one pair of arms and lacking the crown, as in the early western Chalukya Gaṇeśa from the Maṅgaḷeśa caves at Badami) by far the most beautiful example is one hewn out of a solid piece of rock standing in a field at Biccavolu near Rajahmundry (PL. 222).

At Vijayavada itself there are several Nandis of eastern Chalukya work which, with their fine garlands of bells, closely resemble the western Chalukya and are more attractive than other types lacking this decoration. At Vijayavada, at some distance from Akkannamādana cave, is the Jāmidoḍḍi, where some carvings of the eastern Chalukya school of about the 8th to 9th century (PL. 224) are preserved along with the capitals of some pillars which probably composed a mandapa. The pillar on the Indrakila hill, with inscription and panels representing scenes of the Kirātārjuna story from Vijayavada, is very important, as the inscription contributes to accurate dating of the sculpture, and the stylistic features of the sculpture contribute to an understanding of other works.

At Biccavolu there are a number of fairly well-preserved temples with carvings in the niches. The *makara-torana* pattern with floriated tail on the niche top recalls similar work in Pallava temples. Here the simplicity of workmanship and restraint of ornamentation remind us of Pallava work, though there are other features that recall Chalukya traditions from the west. Much the same effect may be observed in Pattadakal, where the southern traditions predominate over the local Chalukya. Here even the representations of Śiva as lord of the dance, or Naṭarāja, have four arms, as in the south, though the northern version, representing him multi-armed, was already present at Mogalrajapuram earlier. A seated Śiva as Virabhadra, from a group of Mātṛkas of which only a Kaumārī and Cāmuṇḍā are still preserved, is of fine workmanship. Though Kaumārī is fashioned in a benevolent aspect, Cāmuṇḍā, as in later medieval sculpture, is here represented as somewhat formidable. The peacock of Skanda and the swan of Brahmā are naturalistically represented beside the two deities. Gaṅgā, the river goddess personified, is also depicted, with considerable charm. In carvings of Gaṇeśa on the vimana top, it may be seen that the extra pair of arms had not yet been added and the realistic elephant head is without crown. A representation in bronze on a seal of this period follows the early tradition of representing Gaṇeśa in this fashion, which continued till about the 9th to 10th century.

These interesting sculptures and the temples themselves have not yet been properly studied. It should be remembered that the eastern Chalukya king Narendramygarāja (Vijayāditya II) won numerous battles (108 are mentioned in inscriptions) and built as many temples of Śiva to commemorate his victories and as a thanksgiving for his success. His able successors Guṇaga Vijayāditya III and Cālukya Bhīma also launched on similar temple-building activity. The fact that Vijayāditya III conquered the Rāṣṭrakūṭas and got from them the imperial insignia including the river symbols Gaṅgā and Yamunā explains the introduction of this northern feature in eastern Chalukya sculpture and monuments, as seen in a temple gateway from Biccavolu. The long and abiding political and cultural contact with the Kalinga country accounts for influences from Kalinga as well, as seen in the popularizing of *mithuna* figures similar to those in the Kalinga temples and in the occurrence of the Lakuliśa instead of the benevolent Dakṣiṇāmūrti form of Śiva.

Somewhat earlier than these and probably to be assigned to the 8th century are the fine panels in a kind of pink stone from the Viṣṇu temple at Samalkot. Here there is a small figure of Gaṇeśa of fine workmanship. Among the larger panels, which are all fixed in walls of later date, one showing Viṣṇu on the bird Garuḍa is remarkable. Other panels of good workmanship still await detailed study. The temple itself is modest and modern-looking, but these sculptures were probably rescued from the earlier structure and fortunately preserved on walls of comparatively modern date.

Later eastern Chalukya stylistic and iconographic tradition may be studied in the temples of Bhīmeśvara at Samalkot, at the Śiva temple at Draksarama, in temples near Rajahmundry, and so forth. Here every architectural element is beautifully decorated, and the grandeur of later western Chalukya style is almost duplicated in the eastern figures, though the profuse ornamentation in the western Chalukya area is a little restrained in the eastern. The squatting lion supporting the pillars at Draksarama should be compared with similar figures from the time of Mahendravarman Pallava, in the earliest caves near Nellore at Bhairavakonda, those of Narasimhavarman, and Chola (Skr. *Cola*) lion-supported pillars of later date.

In such similarity of architectural expression we can see the influence of Chola traditions also. The Chola monarchs Rājārāja, Rājendra, and Kulottuṅga Cola, who was himself the fruit of Chola-Chalukya union, had very close links by marriage with the Chalukya house, and there was a free flow of culture between their kingdoms. One daughter was also given in marriage to the eastern Gaṅgā king, and a descendant of this line, inspired by the traditions of both the kingdoms, introduced certain Chola motifs into Kalinga temples built by him. For instance, Narasimha IV introduced at Konarak the wheel-and-horse motif that occurs in Darasuram and Chidambaram, the Temple of the Sun at Konarak is built in the shape of an enormous many-wheeled chariot, complete with horses.

The next phase of art, Kākatīya, continues the same style with decoration somewhat more elaborated though not to the extent of the Hoysāla sculptures in Mysore. Here also the traditions are more western than eastern Chalukya. In Kākatīya sculpture the fine pillars that glisten like polished horn have bracket figures in various interesting dance poses recalling similar figures from the Chalukya temple of Kuruvatti and from Hoysāla temples such as those at Belur and Halebid. These bracket figures are more elongated and not so profusely ornamented as those from the Hoysāla area, which are somewhat short and stumpy. A large lintel, found at Warangal and now preserved in the National Museum at Delhi is an excellent example of typical Kākatīya art (PL. 224). Here the *makara-torana* motif is most intricately worked, and the figure of dancing Nāṭeśa is exquisite, as are other figures in the panel. Other gateways found at Warangal show equal grace in their sculptural work and recall similar medieval gateways with elaborate carving at Dabhoi in Baroda. There are also Kākatīya temples in Palampet and Hanumakonda, where the same kind of carving in Chalukya style occurs; in Hyderabad State, at Pillalamarri, Nagalapad, etc., and in the Palnad area at Macherla, Gurzala,

etc., carvings of the Kākatiya period still await study. Some of the Kākatiya temples in Hyderabad have not only a high and elaborately carved plinth, as in Hoyśāla temples, but also have carved stone screens and roofs like those of the Mahādeva temple at Khajuraho and others in that vicinity. On the hill at Tripurantakam in the Kurnool District there is a Śiva temple with fine Kākatiya carving, and down below, near a temple of Durgā, there is a group of hero stones, in which sculpture of this period abounds, some of them full of life and spirit. A Mahiṣamardini Durgā (Durgā slaying the devil Mahiṣa) of exquisite workmanship from the hill temple at Tripurantakam (PL. 225) is a masterpiece of Kākatiya art now in the Madras Museum.

The next phase of art, under the Redḍis, is not essentially different from the Kākatiya art, which it closely follows in tradition. In the Palnad area and in and about Guntur there are many 14th-century temples wherein the art displayed is of this period. The Śiva temple at Srisaīlam in the Kurnool District underwent many additions and renovations at the hands of Redḍi kings. The carving all along the *prākāra* (enclosing wall), depicting several scenes from the lives of Śaiva saints, should be assigned to this period, though the sculpture of a princess and a standing warrior and other miscellaneous figures in Chalukya style belong to the Kākatiya period.

The Vijayanagar emperors ushered in a new phase of art which mostly follows the southern traditions. Though in the early stages there is much evidence of Chalukya influence in the Telugu and Kanarese areas, as at Tadpatri and Bellary, as the years rolled by and the entire southern peninsula became an integral part of the vast dominion, the traditions of the southern part began to predominate, with the result that Vijayanagar temples, including their gopuras, mandapas, and vimanas, were constructed alike almost everywhere. The Vijayanagar monarchs were great builders. There was intense temple-building activity and many great sculptors were perennially busy. Among early monolithic sculptures of the Vijayanagar period there are such fine examples as the Gaṇeśa and Nara-simha (both mutilated) at Hampi, a fine, huge image of Raṅganātha near the Chakratirtha tank at Tirupati, the marvelous representation of Cakrapuruṣa close to it, Pāṇḍuraṅga also nearby, and a few other sculptures representing *dvārapālakas* and attendants strewn about in Tirupati. In the image of Raṅganātha, in a kind of greenish basalt, not only are the features exceedingly well carved and the typical ornaments of the period well depicted but the *trivatsa* mark is also prominently represented in the form of a goddess in a triangle; thus the older iconographic tradition (see above) merges into the new significance of the triangle. Some of the finest carvings of the early Vijayanagar period are from Tadpatri, where, taking a single example as typical of the rest, we may consider the beauty and grace of the goddess on the *mākara* (Gaṅgā) with the *śālabhājīkā* motif (cutting down a branch from a tree) on the doorjambs.

Hampi, the capital of the Vijayanagar emperors, has still a number of fine carvings typical of Vijayanagar work in spite of the fact that most of the monuments there were razed to the ground after the battle of Tallikota. In the Hazāra Rāma temple there are many panels representing the story of Rāma. These closely resemble representations at Penukonda, where the temples of Śiva and Viṣṇu of the same period have scenes from the *Rāmāyaṇa*, the *Bhāgavata-purāṇa*, and stories of the Śaiva saints. All these carvings are in miniature size. Other carvings at Hampi show rows of soldiers on horseback, elephants in procession, dancers and musicians, and scenes of *kolāṭṭam*, which was a favorite folk art of the period surviving to this day like the classic dance Bhārata-nāṭyam.

In the temple of Viṭṭhala at Hampi the sculptor has created a monolithic car (ratha) on wheels, which is one of the most beautiful creations of Vijayanagar sculpture and is comparable to a similar one from the temple at Tadpatri.

The temple of Virabhadra and Rāma at Lepaksi built by Virūpaṇṇa, a chieftain under the Vijayanagar emperor, contains a *nāṭya-maṇḍapa* (hall, theatre) with fine large sculptures representing dancing Śiva, musical attendants, and nymphs. The huge monolithic Nandi here is among the most important of

its kind. In the fort of Vellore, one of the most beautiful in India, there is a temple of exquisite workmanship in which the carving is so rich that it may be considered an epitome of Vijayanagar art. The prancing lions and horses that form the columns of the beautiful mandapa, the almost alive monkeys and doves carved on the mandapa roof, and the rock-cut chains that move freely like metal ones are splendid examples of art. An exactly similar temple of the same time is that of Mārgasā-hāyeśvara at Virinchipuram in the vicinity of Vellore. In several other places, including Tiruvannamalai, Chidambaram, and Kanchipuram, the Vijayanagar monarchs built several hundred gopuras and mandapas with fine carving, and there is probably no temple in south India where Vijayanagar art has not been added to earlier structures. Among the Vijayanagar sculptures there are many that represent portraits of donors — the king and the noblemen, queens and princesses. This tradition was continued by the Nāyak kings, the political successors of the Vijayanagar monarchs in Madura and Tanjore, and the portrait of Tirumalanāyak and his queens is a splendid group.

To understand this later development one should study the fine early portrait bronzes; for example, that of Kṛṣṇadevarāja and his queens (PL. 226) with their names inscribed and that of Venkatapatirāja. These are located in the front mandapa of the temple on the hill at Tirupati, where they stand with hands clasped in eternal adoration of the Lord of the Seven Hills, whom they revered all their lives. His figure is imprinted on some of their coins, and at the entrance of his temple the *dhvajastambha* (literally, flagpole or standard pole), which exemplifies the style of wood carving of the time, prominently shows the Varāha crest of the Vijayanagar monarchs. The Vijayanagar period marks the last great phase of Andhra art. After its complete degeneration set in, and modern art is a miserable parody of earlier classical art.

PAINTING. The earliest paintings in India are those of the time of the Sātavāhanas in Caves IX and X at Ajanta (q.v.). The long panel representing the *Śaddanta Jātaka* (the Jātaka of the six-tusked elephant) is one of the most effective depictions of this story, ranking with the most powerful delineations in any monument in India. Unfortunately, vandalism has destroyed a good part of these paintings, so that it is impossible to see them clearly without the help of elaborately traced-out outlines omitting the scratches that have ruined the panels.

The turbans, coiffures, and ornaments, the contours of features, dress, and apparel, the poses and arrangement of figures, and the details of furniture and architecture in these panels closely resemble those of sculpture of the 2d century B.C. from other parts of India, as at Bharhut, in the early phase at Amaravati, at Bhaja, and Sanchi. The necklaces of princes and princesses, the feminine coiffure, the dress of the hunter, the page boy with his peculiar short shirt, the contours of the animals, the simple wheeled chair and footrest — all are noteworthy for their detail.

The next phase of painting at Ajanta, under the Vākāṭakas, shows the same development from the late Sātavāhana style as may be traced in sculpture. In fact, the profusion and charm of Vākāṭaka sculpture are reflected even more effectively in the colorful episodes of Buddhist Jātakas and portrayals of the life of Buddha painted during the period. Of this period, unfortunately, nothing survives in the eastern area, the homeland of the Andhras, where the Sātavāhana sway was most dominant in its latest phase.

The eastern Chalukya temples, which are rich in sculpture, must have contained painted scenes also, but no trace of them can now be discovered. However, we can see classical grace from this source in the paintings at Sittanavasal, since this is among the earliest temples excavated in the living rock by Mahendravarman, who, as noted above, carried Andhra traditions farther south.

The eastern Chalukyas, who had succeeded the Viṣṇukūṇḍins, were in their turn replaced by the Kākatiyas, and we find magnificent temples created by them in the Chalukya tradition. Fortunately at least one panel survives, depicting the *amṛtamanthana* (preparation of ambrosia) in the temple at

Pillalamarri, to give us a taste of what Kākatiya painting was, though compared to the profusion of Kākatiya sculpture this is rather meager. At Tripurantakam in the Kurnool District, the Kākatiya temple on the hill has some traces of painting quite faded and darkened by soot. The Pillalamarri painting recalls similar Chalukya sculptured panels representing the favorite theme of *amṛtamanthana*. First seen at Udayagiri, near Bhilsa, over the entrance of the Gupta cave, this theme is repeated in Chalukya temples, beginning with those at Badami, and occurs over and over again in later treatments, including decoration on Kākatiya temple pillars. The representation at Pillalamarri is very spirited, showing the daityas (Skr. *daitya*, demon) on one side and adityas (divinities) on the other, the snake as the churning string, and Mount Mandara towering in the center as churning stick. This is probably a rare painting of the 12th century from Andhra territory.

The traditions of painting were continued by the Vijayanagar emperors, and in the heart of their empire, at Hampi, there are numerous paintings (notably in the Virūpākṣa temple) giving a colorful picture of the life of the time. One scene from this temple shows the great teacher Vidyāranya Śaṅkarācārya moving in a palanquin in procession. There are similar paintings of the period in Sommapalle.

Of about the same date or slightly earlier are the faded but very interesting ceiling paintings from the mandapas of the temple by the river at Tadpatri. Here the proportion of the figures is sometimes larger, the contours are more perfect and lovely, and the skill of the painter is shown at its best.

In Lepaksi in the Anantapur District, which was a great center of pilgrimage and trade in the Vijayanagar period, Virūpaṇṇa and Virāṇṇa Nāyak, the former as a chief representing the emperor, beautified the place by building the temple with its splendid dance hall and with paintings. The latter belong to the first half of the 16th century and adorn the ceiling of the *ardhamandapa* (PL. 227) immediately adjoining the *raṅgamaṇḍapa* (pavilion for public spectacles). As these two chieftains were devotees of Śiva as Virabhadra (creative power), the themes are mostly Saivite, but there are also other themes.

These Vijayanagar paintings may lack the flow and sweep of line that characterize the easy and yet majestic contours in the Pallava paintings; they may lack the rapid movement, the variety of poses, and the detailed ornamentation in Chola paintings; yet they have a characteristic splendor of color and a stylization that is not yet too degenerate. Among the scenes are: Śiva destroying the demon of ignorance Andhakāśura; Śiva as Yogadakṣiṇāmūrti, the divine teacher seated on a hillock under the sacred tree expounding the mystery of life to sages; Śiva as Caṇḍeśānugraha, the Lord conferring a boon on one of his most faithful devotees (in its own way a masterpiece comparable with similar versions of this theme from Gaṅgaikondacholapuram and Kanchipuram); Śiva as the lovable beggar exciting the passion of the saintly women of hermitages (PL. 227); Śiva in the combined aspect of Harihara (Śiva and Viṣṇu, the protector and the destroyer); Śiva as Tripurāntaka, the savior of the three worlds, assuming the warrior's *ālīdha* attitude (a dance figure that represents Śiva and symbolizes pride and victory) to fight the *tripuras* (overpowering demons); and Śiva as Gaṅgādharma, receiving the heavenly stream on his locks and appeasing his angry spouse Pārvatī, who is incensed at the prospect of a second wife for her husband.

Among these paintings at Lepaksi a huge depiction in color of Virabhadra in the inner mandapa is a great achievement of Vijayanagar painting. The portraits of Virāṇṇa and Virūpaṇṇa, the chieftain brothers, are preserved as with their train they are shown receiving sacred ashes from a *purohita* (priest) standing before their tutelary deity Virabhadra.

These paintings of the Vijayanagar period offer excellent material for the study of the life and culture of the period, since they show minute details of dress, ornaments, architecture, furniture, customs and manners, etc.

The later Nāyak paintings in various other temples in the extreme south, as at Madura and Tanjore, only represent a continuation of the Vijayanagar traditions found all over their huge empire.

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Calambur SIVARAMAMURTI

Illustrations: PLS. 220-227: 3 figs. in text.

ANDREA DA PONTEREDERA. Architect and sculptor, also known as Andrea Pisano [b. ca. 1290; d. (?) 1348 or 1349]. Son of a Pisan notary, Ser Ugolino Nini, who is mentioned in documents in 1285, 1302, and 1320 in connection with the Opera del Duomo at Pisa. He is assumed to have been born at Pontederà (Pisa), since the name of his son Nino appears in the form "quondam Magistri Andree de pontehere." A birth date about 1290-95 (and not about 1270, as indicated by Vasari), is now generally postulated. Between Jan. 22, 1329 or 1330 and Mar. 15, 1335 or 1336, Andrea's name appears repeatedly in documents relating to the bronze door of the Baptistery in Florence, which bears the inscription: ANDREAS:UGOLINI:NINI. DE:PISIS:ME FECIT:A:D:M:CCC:XXX. On Apr. 26, 1340, he is mentioned as *Capomaestro* of the Opera del Duomo in Florence. Vasari states that Andrea was employed as architect by the Duke of Athens; this is uncorroborated, but the theory has been advanced that he left Florence on the fall of the Duke of Athens in 1343. Between May 14, 1347, and Apr. 26, 1348, his name appears on four occasions as *Capomaestro* of the Cathedral at Orvieto; by July 19, 1349, he had been succeeded by his son Nino. Though Andrea is widely assumed to have died in 1348 or 1349, a document of Oct. 22, 1349, implies that he was still living at this time, and the earliest reference to his death occurs in a document of 1358. Vasari, who gives the date of Andrea's death as 1345, states that he was buried in the Duomo in Florence in a grave bearing the epitaph:

Ingenti Andreas iacet hic Pisanus in urna
marmore qui potuit spirantes ducere vultus
et simulacra divina (deum) mediis imponere templis
ex aere, ex auro candenti, et pulcro elephanto.

Nothing is known of Andrea's work before 1329-30. He is described on two occasions in 1335 as "orefice" (goldsmith), and must therefore have been trained in a metalworker's studio. Ghiberti states that in his youth Andrea executed "moltissime cose" for S. Maria della Spina at Pisa; on chronological grounds

this is unlikely, and none of the external sculptures on S. Maria della Spina are related in style to Andrea's work. The hypothesis has also been advanced by Milanese and others that before 1239 he was in contact with the workshop of Maitani at Orvieto; there is no documentary warrant for this view, though the contingency cannot be ruled out. A wooden *Virgin Annunciate* in the Museo Nazionale at Pisa, dated 1321, has been inconclusively ascribed to Andrea by Carli and Valentiner.

The progress of the first bronze door of the Baptistry in Florence is exceptionally richly documented (documents printed by Frey, analyzed by Falk). The project for wooden doors covered with gilded copper or metal is first heard of in 1322 but seems to have been superseded in 1329 by a new project for doors of solid bronze. In this year a goldsmith, a Piero di Jacopo, was despatched by the Arte di Calimala first to Pisa "a vedere quelle che sono in detta città e le ritragga," and then to Venice to search for a master to cast the work. On Jan. 13, 1329 or 1330, work on the wooden framing was begun, and nine days later "maestro Andrea d'Ugolino, maestro delle porte" started work. By Apr. 2, 1330, "furono finite le porte di cera." In view of the short time interval, this document must refer to the frame of the door and not to the narrative reliefs. On Apr. 27, 1332, there appears the name of a Venetian bell founder, Lionardo d'Avanzo, who was responsible for casting the door. This document confirms the statement of Villani, who served on the committee of the Arte di Calimala appointed to supervise the door, that the door was modeled, cleaned, and gilded by Andrea Pisano and cast by Venetian craftsmen. Work on the first wing was finished by Mar. 24, 1333, and the second was gilded by the end of this year. Twenty-four lion masks were commissioned from Andrea on Mar. 24, 1333, for the framing of the second wing. On Aug. 8, 1335, Andrea was instructed to remedy certain flaws in the casting or alignment of the doors; on June 20, 1336, they were weighed; and shortly afterward they appear to have been put in place, according to Simone della Tosa "alla porta di mezzo" — that is, in the entrance to the Baptistry opposite the Cathedral, where they were later replaced by Ghiberti's first bronze door. The names of the goldsmiths Piero di Jacopo, Piero di Donato, and Lippo Dini appear as assistants of Andrea in work on the door.

The statement of Vasari that Giotto prepared "un disegno bellissimo" for the doors is no longer credited.

Each wing of Andrea's door contains 14 rectangular reliefs (PL. 229). This scheme derives either from Bonanno's Porta di S. Ranieri at Pisa (where the wings contain five pairs of rectangular reliefs with, at top and bottom, oblong reliefs running the whole width of each wing) or from the destroyed Porta Regia of the Cathedral. In Andrea's hands, however, it is invested with a purely Gothic character; the narrative reliefs are recessed in molded frames between narrow borders decorated with gilt studs and rosettes, punctuated with lion masks. The 28 reliefs also contain interior quadrilobe frames; these are of French origin and are similar to those found at a considerably earlier date on reliefs in the choir of Notre Dame at Paris and elsewhere, as well as in French Gothic metalwork. The use of these quadrilobes exercised no influence on Andrea's compositional procedure, save in the case of five scenes in a landscape setting on the left wing, where the scheme is adapted to the surrounding quadrilobe. Elsewhere the containing rectangle determines the form of the reliefs.

Of the 14 reliefs on each wing, the upper 10 represent scenes from the life of St. John the Baptist, and the lower 4 show Virtues. The program (for which see Falk and Lanyi) follows that of the mosaic scenes from the life of the Baptist in the interior of the Baptistry, save for the inclusion of the scenes of *Zacharias before the People*, *St. John's Head Presented to Herodias* (PL. 230), and *The Baptist's Body Carried by His Disciples*, which are omitted in the mosaics. With many of the scenes (e.g., *The Annunciation to Zacharias*, *The Visitation*, PL. 230, *The Young Baptist Entering the Wilderness*, *St. John Preaching*, *The Baptism of the Multitude*, and *The Baptism of Christ*, PL. 228) the mosaics offer a direct typological precedent for the reliefs. Other reliefs (e.g., *The Naming of the Baptist*, *The Birth of the Baptist*, *The Feast of Herod*, and *The Baptist's*

Head Presented by Salome to Herodias) find their typological source in the frescoes by Giotto in the Peruzzi Chapel in Sta Croce. Twenty-three of the twenty-eight reliefs rest on shallow protruding platforms and are composed with strong vertical and horizontal emphasis. The architectural constructions are normally placed on a diagonal, in such a way as to establish the spatial content of the scene, and even where the elements depend from the mosaics (as in the *Visitation*), their treatment is Giottesque. The grouping of the figures achieves the utmost concentration, and in *The Young Baptist Entering the Wilderness*, *The Preaching of St. John the Baptist*, and *The Baptism of the Multitude*, the diffuse compositions of the mosaics are revised and unified. The three prison scenes, which derive neither from Giotto nor from the mosaics, are some of the most impressive and ambitious of the cycle. Though the repertoire of gesture derives in the main from Giotto, the forms retain a linear character, and the narrative technique has the intimacy and expressiveness peculiar to Andrea Pisano.

According to the *Centiloquio* of Antonio Pucci, Andrea assumed control of the building of the Campanile of the Duomo in Florence after Giotto's death in 1336, introducing certain improvements or modifications in Giotto's scheme. It has been argued (Nardini) and widely accepted (Lanyi, Paatz) that the register of the Campanile, containing niches, and the register immediately above it are due to Andrea. He must also have been in close touch with Giotto during the building of the lower registers and had a large share in the marble reliefs with which they are decorated. These comprise: (above) 28 reliefs with representations of (west) *The Seven Planets*, (south) *The Seven Virtues*, (east) *The Seven Liberal Arts*, (north) *The Seven Sacraments* (III, PL. 313); (below) 21 hexagonal reliefs representing (west) *The Creation of Adam*, *The Creation of Eve*, *The Labors of Adam and Eve*, *Jabal*, *Jubal*, *Tubalcain*, and *The Drunkenness of Noah*; (south) *Gionitus the Astronomer*, *House-building*, *Medicine*, *Hunting*, *Weaving* (PL. 231), *Phoroneus the Lawgiver*, and *Daedalus*; (east) *Navigation*, *Hercules and Cacus*, *Agriculture* (PL. 232), *Drama*, and *The Architect*; and (north) *The Sculptor* and *The Painter*. This scholastic program (for the interpretation of which see Schlosser), with its representations of the practitioners of the arts, sciences, and works of man, is perhaps due to Giotto. The 28 reliefs in the upper register are ascribed by Ghiberti to Andrea; those on the west, south, and east sides were perhaps carved in Andrea's workshop, while those on the north side are by Alberto Arnoldi. For the much superior reliefs in the lower register Andrea was in large part responsible. Pucci states that the "primi intagli" were made by Giotto, and this is corroborated by Ghiberti, who records a tradition that "le prime storie . . . furono di sua mano scolpite e disegnate" and that "Giotto si dice scolpi le prime due storie." Vasari repeats Ghiberti's statement and adds that "disegnò Giotto tutte le storie che andavano nell'ornamento." On the respective shares of Giotto and Andrea Pisano in the carvings, a wide variety of view has been expressed. Thus it has been claimed (Schlosser) that all the reliefs on the west side, the *Gionitus* of the south, and the *Architect*, *Sculptor*, and *Painter* were carved by Andrea Pisano or his assistants from Giotto's cartoons. The only admissible test of authorship is the relation of the compositions to those of the bronze door. If the evidence for Giotto's intervention be accepted, this can be most readily presumed in the *Tubalcain*, where the forms are more ample and the design is firmer than in the relief of *The Painter* or in *The Naming of the Baptist* and *St. John Visited by His Disciples* (PL. 230) on the bronze door, and more tentatively in the *Navigation* and *Agriculture*. Andrea seems to have been responsible for the design and execution of the first five reliefs on the west side, the *Weaving*, *Hunting*, and *Daedalus* on the south, the *Hercules and Cacus* on the east, and both reliefs on the north. The remaining seven reliefs appear to have been carved by two or more assistants from his designs. The compositions have the same rectilinear character as those of the bronze door, and where interiors are shown, use is once more made of a horizontal platform which neutralizes the lower part of the hexagonal field. The properties set on the platform (e.g., the seat and easel of the painter, the seat and bench of the sculptor,

and the loom of the weavers) are again designed to establish a space illusion within the reliefs. In certain of the reliefs (e.g., the *Jubal*) the effect achieved is one of unprecedented naturalism. By virtue of their medium and superior scale, the Campanile reliefs exercised greater influence than those of the bronze door and in the early 15th century supplied a point of departure for the relief style of Nanni di Banco.

Eight of the sixteen niches in the third register of the Campanile contained statues (now in the Museo dell'Opera del Duomo) associable with Andrea or his workshop. These represent *Solomon* (PL. 233), *David*, the *Erythraean Sibyl*, the *Tiburtine Sibyl* (PL. 233), and four prophets. In the absence of documents and of authenticated sculptures by Andrea on a comparable scale, the attribution of these figures is debatable. The four prophets are much inferior to the remaining figures, which are connected in type with figures in the carvings beneath and on the bronze door. Andrea was certainly responsible for the conception, and probably also for the execution, of the latter figures, which are planned as reliefs with a flat frontal plane, and in which the drapery forms of the carvings in the lower register are expanded to the scale of life-size statuary. Two marble statuettes of *Christ* and *S. Reparata* in the Museo dell'Opera del Duomo (perhaps from a complex in the Baptistery or Duomo) conform closely to the style of the bronze door and the Campanile reliefs.

The single documented work by Andrea at Orvieto is a marble *Maestà* formerly over the Porta di Postierla of the Cathedral, of which the Virgin and Child and two headless angels are in the Museo dell'Opera del Duomo. Before the central figure was associated with the appropriate documents (Lanyi, Cellini), which prove it to have been set up in the early months of 1348, it was widely ascribed to Andrea's son Nino. The distinction between the late work of Andrea and the early work of Nino is the central problem of Andrea's final phase. The *Madonna* appears to have been carved in Pisa, and it is generally supposed that between 1343, the presumed terminal date of his activity in Florence, and 1347, when his name appears at Orvieto, Andrea was working in his native town. To this period belongs the tomb of Simone Saltarelli (d. 1342) in S. Caterina at Pisa. The attribution to Andrea of the Orvieto *Madonna* presents considerable difficulties, and it is possible that we have here to do with a figure executed in Andrea's workshop by Nino Pisano. It has been argued (Becherucci, Valentiner) that two more important works, the *Madonna del Latte* formerly in S. Maria della Spina at Pisa and the *Madonna and Child with SS. Peter and John the Baptist* from the altar of this church (Mus. Naz., Pisa), are inseparable in style from the Orvieto *Madonna* and are also works by Andrea and not Nino Pisano, to whom they are traditionally ascribed. The *Madonna* on the Saltarelli monument, the Orvieto *Madonna*, and the works from S. Maria della Spina are evidently by a single artist but are more readily explained as an early phase of Nino than as a late phase of Andrea Pisano. A lunette of *St. Martin and the Beggar* on S. Martino, Pisa, is related to the Campanile carvings and may have been executed by Andrea after 1343.

Andrea Pisano is in some respects the most important sculptor active in Florence in the 14th century. In the bronze door of the Baptistery Giotto's compositional and narrative principles are for the first time adapted to relief sculpture, and for this reason it forms a landmark in the development of sculptural style.

Since the publication of the elaborate account of Andrea's work in the second edition of Vasari's *Lives*, his significance has been generally acknowledged, but he remains a mysterious artist, the limits of whose personality are still unclear. Neither his relation to Giotto on the bronze door and the Campanile carvings nor his later relation to Nino has been satisfactorily explained. In contradistinction to his predecessor in work on the Baptistery, Tino di Camaino, Andrea was a classicist, in whose hands Gothic sculptural style took on the character it was to retain in Florence for the remainder of the century. For our knowledge of Andrea as architect we are dependent solely on the section of the Campanile for which he appears to have been responsible, and the detailed account of his archi-

tectural activity given by Vasari (cf. Kallab) is generally discredited.

SOURCES. G. Villani, *Chroniche*, X, chap. 178, Venice, 1747, Florence, 1847; S. Della Rossa, *Annali*, Richa, *Notizie storiche delle chiese fiorentine*, 1757, I, p. xx; G. Guasti, *Santa Maria del Fiore*, Florence, 1887, pp. xlvii-li, 55; L. Fumi, *Il Duomo di Orvieto*, Rome, 1891, pp. 30, 60-61, 476; G. Vasari, *Le Vite*, ed. Milanese, I, Florence, 1906, pp. 481-95 (ed. Frey, I, Berlin, 1911, pp. 349-53; Am. ed., trans. E. H. and E. W. Blashfield and A. A. Hopkins, I-IV, New York, 1913); L. Ghiberti, *Commentarii*, ed. Schlosser, Berlin, 1912, pp. 37, 43; A. Pucci, *Centiloquio*, canto LXXIX, 81-88, *Delizio degli eruditi toscani*, VI, Valmartina, 1955, p. 119.

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Illustrations: PLS. 228-233.

ANDREA DEL CASTAGNO. Painter, born about 1421 in Castagno, a village on the western slopes of Mount Falterona, he died of the plague in Florence in Aug. 19, 1457, and was buried in the church of SS. Annunziata. It was formerly believed probable that he was born in Corella, in the district of S. Martino (G. Poggi, *RArte*, 1929); there his father, Bartolo, was listed in a document along with his family, which consisted of his wife, Andrea, and two younger children, Simone and Ginevra. Actually this document is a copy of an original one dated 1427. It has been established by recent research (A. M. Fortuna, *Andrea del Castagno*, 1957, Florence, republished all the documents concerning the painter, with numerous additions) that Bartolo originally came from Castagno, where he owned property; he had gone to Corella with his family to escape the war between Florence and the Visconti family (1425-28) and later returned to his native village. The actual date of Andrea's birth, fixed by Poggi at about 1423, has been put back to about 1421.

The known dates in Castagno's life are the following: In 1442, together with Francesco da Faenza, he frescoed the ceiling of the S. Tarasio Chapel in the Church of S. Zaccaria in Venice. This work is dated and bears the name of Andreas de Florentia, together with that of his coworker (G. Fiocco, *Il Marnocco*, 1920). On Feb. 26, 1444, Castagno was paid 50 lire for a cartoon of the *Deposition*, executed in glass by Angiolo di Lippo for an oculous in the drum of the dome of the Cathedral at Florence (G. Poggi, *Il Duomo di Firenze*, Berlin, 1912, doc. 762). On May 30 of the same year he was inscribed in the Guild of Doctors and Apothecaries. Also for the Cathedral he painted the lily of Florence between two putti and an *Agnus Dei* above an organ whose capitals he gilded. For these small commissions he was paid on Feb. 28 and on Dec. 19, 1446 (Poggi, op. cit., p. 277, docs. 1387 and 1390). On Nov. 20, 1449, Castagno was commissioned to paint an altarpiece for the Church of S. Miniato fra le Torri in Florence (demolished), and was paid 104 lire on Apr. 20 and again on July 6, 1450 (O. H. Giglioli, *RArte*, 1905). The altarpiece was rediscovered in the Kaiser Friedrich Museum in Berlin (G. Gamba, *RArte*, 1910) but disappeared during World War II.

From January, 1451, to September, 1453, having received various payments totaling 100 florins (Giglioli, *RArte*, 1905), he continued work on frescoes by Domenico Veneziano and Piero della Francesca in the Chapel of S. Egidio in Florence. There he painted three episodes of the life of the Virgin: the Annunciation, the Presentation in the Temple, and the Dormition, all subsequently destroyed. Since Castagno was ill in 1454, Alessio Baldovinetti filled in the color on a "large panel" representing hell, "with many nudes and infernal furies,"

drawn by Castagno, who was due to receive 40 lire when the work was completed on June 16 (A. Baldovinetti, *Ricordi*, ed. G. Poggi, Florence, 1909). In 1455 he executed, for the Orlando de' Medici Chapel in the SS. Annunziata, a fresco depicting Lazarus, Martha, and Mary Magdalene, which has since been lost. For this work he received 11 large florins in three installments — July 3, Aug. 2, and Aug. 9 — from the Convent of the Serviti. This sum also covered payment for "an angel above in the tabernacle," probably in the framework (C. von Fabriczy, *RepfKw*, 1902, and Poggi, *RArte*, 1906). He was paid 24 gold florins for painting the equestrian portrait of Niccolò da Tolentino (PL. 246) in 1456, commissioned on Oct. 19 of the preceding year to honor the captain of the Florentines at the Battle of S. Romano. For this he received the balance of 65 lire and 4 soldi on Mar. 1 (G. Gaye, *Carteggio inedito d'artisti*, I, Florence, 1839). Finally, in 1457, he painted a Last Supper, also lost, for the refectory of the Hospital of S. Maria Nuova, for which he was owed 18 soldi on May 10, three months before his death (Poggi, *RArte*, 1906). Castagno's wife died of the plague eleven days before his death; he owed 10 florins to the goldsmith Forzore di Nicolò Spinelli and an additional 10 florins to the painter Ventura di Moro (G. Gronau, *RArte*, 1932). Additional minor details can be found in G. Milanesi (*Giornale storico degli archivi toscani*, VI, 1862) and Fortuna (op. cit.).

These are the established dates. In addition, it is known that a painter, Andrea — not conclusively identified as Castagno — was paid 5 florins on Apr. 30, 1444, for a portrait of Leonardo Bruni, who died on Mar. 8 of that year. The portrait was done for the office of the Proconsul of the Guild of Notaries and Judges and was placed next to the paintings of Salutati and Claudiano, painted by Ambrogio di Valdese. It is also reported that Andrea painted the Three Virtues "in spalliera Audientiae maioris" for the Proconsul by the end of March, 1447 (Poggi, *RArte*, 1927, and Fortuna, op. cit.). It has not been established whether Castagno is the Andreino da Firenze who was engaged in decorative work in the Vatican from Sept. 26 to Oct. 13, 1454 (E. Müntz, *Les arts à la cour des papes*, I, Paris, 1878).

The figures of the hanged men on the façade of the Palazzo del Podestà, representing the traitors to Florence after the Battle of Anghiari (June 29, 1440), were Castagno's first work and earned him the nickname of "Andrein degli Impiccati." These figures, later destroyed, indicate that early in his career he became an expert mural painter. Two years later, in S. Zaccaria at Venice, the frescoes of the four Evangelists with Zacharias and John on either side of God the Father (PLS. 234, 235) reveal a free spatial handling and a physical vigor that relates them to Donatello's sculpture. The figures, resting on clouds against an azure background, each isolated in the vaulting of the chapel, recall the early Lippi in their contrasts of light and shadow; and the concentrated energy in the fierce heads with their flashing eyes makes the figures more akin to those of Cimabue than to Masaccio's thoughtful and restrained rendering of the Apostles in S. Maria del Carmine. Castagno's mastery of light had at this point achieved a full plastic realization, evidenced throughout, except in the figure of St. John the Evangelist, which is softer in its pictorial rendering and perhaps carried out by another and after a cartoon by Castagno. Although Castagno's hand is evident throughout the major portion of the frescoes, some minor parts suggest the collaboration of Francesco da Faenza, working in the style of the master.

Castagno's first period also includes the mural painting removed from the chapel in the Castello del Trebbio (Vale Sieti) and now in the Contini Bonacossi Collection in Florence. Much in the manner of Paolo Uccello, space is defined by perspective, while Angelico is suggested in the sweetness of the Madonna. The twin suppliants, Niccolò and Oretta di Piero de' Pazzi, born in 1437, reveal the artist's interest in portraiture and suggest 1443 as the approximate date of the work.

The *Crucifixion* in the cloister of the Church of S. Maria degli Angeli (PL. 234), which follows these works of the formative period, shows a more coherent, established style. The scene is placed between fluted pilasters, like Masaccio's *Trinity*,

and echoes his work; it is strongly plastic in style and possesses a new moral elevation, particularly in the solid, immobile Christ. For the 1444 cartoon of a *Deposition*, planned for one of the eight circular stained-glass windows of the Cathedral at Florence, Castagno emphasized the horizontality of the dead Christ in contrast to the vertical figure of the Virgin. The monumental and powerfully foreshortened figures are reminiscent of the voluminous contemporary works of Paolo Uccello and of Donatello's grandiose *tondo* of the Coronation. Indeed, Castagno was in competition with Uccello and Donatello, as well as Ghiberti, all of whom were coworkers on this project.

Between about 1445 and 1450, Castagno worked on the cycle of the Passion of Christ in the refectory of the Benedictine convent of S. Apollonia (PLS. 238, 240, 242-245). This was preceded, however, by a *Pietà* in the lunette of the convent door. Reverting to the iconography of the "Man of Sorrows," the *Pietà* is seen on a sarcophagus between two angels, obliquely foreshortened so as to obtain the greatest spatial depth without altering the balance of the groupings. Variety in arrangement gives vitality to the figures in a theme which was treated both earlier and later by Donatello and from which many works of the Paduan and Venetian painters derive.

Castagno's work was based on a preliminary sketch drawn directly on rough plaster, with several successful variations, following the medieval technique of fresco painting. The sketch, executed in a red pigment known as "sinopia," was discovered in 1951. On the back wall of the refectory are three dramatic episodes of the Passion, with the central scene, the *Crucifixion*, dominating the two sides on which are painted the *Resurrection* and the *Entombment* against a large unifying landscape of desolate, rolling hills (PL. 242). The dominance of the *Crucifixion* follows the usual Renaissance practice of changing the chronological sequence of the Biblical story. The powerful Christ on the cross (PL. 243), strictly geometric in its over-all modeling, harmonizes with the two coherent and compact groups at its base. A full, calm light softens the sharp contrasts characteristic of Castagno, probably as a result of contact with Piero della Francesca and Domenico Veneziano, who took part in painting the lost frescoes of S. Egidio. At the same time, six hovering angels, who with the landscape contribute to the unity of the whole, emerge dramatically into the foreground, amid a violent play of light, as if they were cast in metal. The foreshortened *Entombment* has unusual dramatic vigor, and the *Resurrection*, Giottesque in the landscape and guards but otherwise characteristically Renaissance, includes a Redeemer broadly rendered in which the same diffused light and clear coloring, probably again influenced by Piero and Veneziano, soften the metallic modeling often seen in Castagno.

Following the removal of these much deteriorated frescoes, done partially in a form of tempera, a large part of the sinopia sketches (PL. 244) were surprisingly uncovered, revealing that Castagno used both the old technique and that of pouncing, traces of which can be seen in the radiant head of the resurrected Christ. These drawings represent a completely unknown aspect of the painter. On occasion, with shadows strongly emphasized, as in a woodcut, and with their bold energy of design and vitality in handling, these fresh and spontaneous sketches not only illustrate the genesis of the final work but aid in the reconstruction of lost sections. On the lower part of the wall the master carried out a large *Last Supper* (PLS. 238, 242) stretching the length of the refectory wall so that the light coming from the right of the observer would unify it with the upper stories. Unfortunately, however, the surface of this fresco has been dimmed by oil and glue stains.

The *Last Supper*, in relation to preceding Giottesque iconography, assumes preeminent value for its architectural construction in an impeccable Renaissance perspective joined with Donatellian embellishments. An unusual and rich polychrome of shining marble is so placed that it underscores the plasticity of Christ and the Apostles, who remain, as though action and animation had been suspended, at the moment when Judas, seated opposite them (John 13: 21-27), receives the piece of bread. The lifelike, seemingly frozen figures, creating an effect that was to be exploited with deleterious results by other artists,

are separated from one another — set off, so to speak, in the light of their monumental existence — to the extent of being misleadingly suggestive of Caravaggio.

The *Portrait of a Gentleman* (Mellon Coll., Nat. Gall., Washington, D.C.) is related to the *Last Supper* in S. Apollonia as much for its bold conception as for the prominent and definite features of the resolute face.

The altarpiece for S. Miniato fra le Torri (PL. 241), depicting the Assumption of the Virgin with four angels, St. Julian, and St. Miniatus (1444–50), suggests, through a softening and idealization of the formal values, a classical tendency that established itself in Florence in the mid-15th century. The corporeal energy already noted is not diminished, however, in the twisted upward movement of the Virgin. And the angels, although delicate, vibrate with the nervous line of contour and, with their fluttering drapery, anticipate the aspirations of younger painters such as Pollaiuolo.

Certain analogous tendencies to movement appear in the contemporary leather shield (PL. 239) depicting the victorious David (Widener Coll., Nat. Gall., Washington, D.C.). A similar idealization of this period is the angel bearing the crown and palm to the young martyr in the *St. Sebastian* (Met. Mus., New York), finished by an apprentice and probably the archetype for noted works by Botticelli and Pollaiuolo.

Toward 1450 the master tried his hand at decoration of a secular nature. For a great hall in the Villa Carducci in Soffiano he painted statuary figures of illustrious men and women (PL. 245), seen from below in classical rectangular niches partitioned by ornamented pilasters, perhaps a reminiscence of Masaccio's *St. Ivo* for the Badia in Florence. Whereas such figures as the Cumaean Sibyl, Queen Esther, and Queen Tomyris were taken from medieval literature, the heroes of those legends were replaced, in accord with humanistic ideas, by six figures ranged next to the heroines: Pippo Spano, Farinata degli Uberti, Niccolò Acciaiuoli, Dante, Petrarch, and Boccaccio — the men who made Florence great. Next to these figures, which are aligned on a long wall, a fresco was uncovered in 1949 depicting Adam and Eve (the latter well preserved), on a short wall by a door. Eve's posture is rendered with a very strong feeling for space. Above the same door is a Virgin, shown half length, with Child, between two angels holding a canopy, a scheme that was to be employed by Piero della Francesca in the *Madonna and Two Angels* at Monterchi. Thus Castagno intended to link the progenitors of man and the idea of original sin to the concept of redemption, celebrating human activity in its highest aspects. This concept was to be worked out in frescoes on the other two walls.

Castagno's straightforward nature, which stemmed from his rustic, mountain background, was moderated by the cultural climate of his time. In the portraits of illustrious men such as Dante and Petrarch, whose iconography was established, the artist refrained from special psychological effects. In fact, being a fresco painter who knew his craft well, he disciplined his articulated forms within geometric regularities derived from Paolo Uccello, in order to bring out their mass. Yet he drew upon one of his favorite sources in the stance of Pippo Spano, taken from Donatello's *St. George*; and he used the Paduan school for analogous solutions, such as the sinuous Madonna and energetic Child.

In this work, notable even from a decorative viewpoint, since the framework anticipates later developments in the science of perspective, the execution of the architectural elements was left mainly to assistants. And in the *Frieze of Putti with Garlands*, two of these little Herculean putti, sensuous and torpid, reveal the hand of two different and inferior craftsmen.

Unfortunately, the three frescoes of S. Egidio no longer exist; Vasari assures us that they were memorable. The two painted after 1451 mark the beginning of Castagno's most advanced period. A fragment in the Da Gagliano Chapel in SS. Annunziata depicts a powerful St. Julian and a robust Christ (PL. 235), their bodily mass weighing heavily against a compact green landscape, which, compared to the wide, desolate ones of the preceding period, is reminiscent of the thick woods and the houses with long, sloping roofs of the artist's

native Falterona. The landscape also illustrates the conversion of St. Julian, who is seen in the background kneeling before a small mountain chapel.

In the fresco *The Trinity* (PLS. 236, 237), with St. Jerome and two female saints, in the Girolamo Corboli Chapel of SS. Annunziata, a sketchy landscape is suggested. The vision of the Trinity amid contrasting rays of light dominates the scene, and the monumental crucifix, foreshortened with a skill worthy of Paolo Uccello, creates an impression of vastness. St. Jerome, even in foreshortening, has a rough realism in his weather-beaten face that stands out in its heroic passion and force, commensurate with the invincible strength of the lion accompanying him. The two hermit saints who flank Jerome (the Mary Magdalene making a Donatellian gesture) have, if not so much burning vitality, an equal spiritual significance. In this clear definition of character, rendered with a quick brushstroke although done in tempera, and possessing the finesse characteristic of the artist, Castagno's realism harmonizes with that of Donatello's late period.

In 1456 Castagno executed the equestrian portrait of Niccolò da Tolentino (PL. 246). In comparison to the adjacent portrait of Giovanni Acuto (Sir John Hawkwood) by Paolo Uccello, massive but static in its splendid volumes, Castagno's fresco, similarly placed in space, emanates a powerful energy in the modeling, the sharp contrasts, the numerous details of form, and the brilliant highlights that correspond to the final Donatellian manner, reflected here in every detail, even in the two active putti carrying shields.

Castagno's activity ended with the *Crucifixion* (PL. 240), removed from the Convento degli Angeli and now in the refectory of S. Apollonia. The nude Christ, muscular but heroic, dominates the four mourning figures, among which the Virgin, emaciated, with harsh facial lines, seems to foreshadow the expressionism of the Ferrarese.

Other lesser works are also worthy of consideration: a *Crucifixion* (Nat. Gall., London) and a *Resurrection* (Frick Coll., New York), both parts of a predella once joined to a much-restored *Flagellation* (Berenson Coll., Florence) and perhaps to a *Last Supper* (Nat. Gall., Edinburgh). All these works throw light on the activity of the artist's workshop about 1450. The two panels have, in fact, been attributed to Pollaiuolo.

The collaborators on the frescoes were all artists of secondary quality. But Castagno's example, by its dynamic formalism, was to influence even Veneziano's late activity (the *St. Francis and John the Baptist* in Sta Croce) and to some extent the figure style of Pesellino, Baldovinetti, and Ghirlandajo. His linear quality, which both limited and accentuated mass, was to inspire the more expressive and dramatic line of Antonio del Pollaiuolo as well as that of Verrocchio, which became taut and energetic in its function, and of Botticelli, which aimed at a poetry of musical rhythms. Finally, the heroic force of Castagno's masses was to be studied by Michelangelo.

Castagno's tortured treatment of form, based on drawing and chiaroscuro, had a decisive influence on the Venetians of the Paduan school: on Mantegna and his companions — Pizzolo, Ansuino da Forlì, and Bono da Ferrara — in the Ovetari Chapel in Padua; and on those two great Ferrarese painters, Cosimo Tura and Francesco del Cossa. Thus the historical importance of the artist goes beyond the Florentine school.

The essential characteristics of Castagno have been defined indirectly in the examination of his works, which created in plastic form mainly "taciturn and perverse individuals" — except when the subject matter minimized such qualities — "imbued with an energy more latent than actual because it does not burst forth into drama but remains, as if unsatisfied and tortured because of a deep-seated gloominess of feeling, prisoner of the soul as form is of matter. Indeed, his style conformed to the sincere but shy nature of the mountaineer" (M. Salmi, *Paolo Uccello, Andrea del Castagno, Domenico Veneziano*, 2d ed., Milan, 1938).

SOURCES AND CRITICISM. That Castagno was fully appreciated in his own century is shown by Cristoforo Landino's commentary on *The Divine Comedy*, in which he praised the artist's spontaneity

and vigor as a draftsman, his great ability at foreshortening, and his efforts toward plasticity. Antonio Filarete and Giovanni Santi also mentioned his fame. The list of his works, first compiled by Francesco Albertini in 1510, contained a mixture of criticism with biographical and pseudobiographical data. Antonio Billi and the Anonimo Gaddiano described Castagno as a shepherd boy who drew sheep on rocks in his native mountains and was discovered and educated by a master in Florence, much as, according to Ghiberti, Cimabue had discovered Giotto. Castagno was described as the murderer of Domenico Veneziano in a slanderous legend that sprang up because of a similarity in names, was taken up by Vasari, and was disproved in the 19th century by Gaetano Milanesi through his research in the archives (*Giornale storico degli archivi toscani*, VI, 1862) and his notation on Vasari (*Le Vite*, Milanese ed., II, Florence, 1878). In his *Lives* Vasari increased the list of Castagno's works and amplified the biographical data (combining it with the life of Veneziano) and took up the circumstances of the artist's discovery. He mentioned the story of the discovery of Castagno not only in his life of Giotto but also in the biography of Sansovino in the first edition and in that of Beccafumi in the second. In Vasari's biography of Castagno, the motif of the discovery is preceded by a pitiful account of the presumed death of the artist's father (actually he outlived his son), whereupon Andrea was taken by an uncle and settled, with the help of Bernardetto de' Medici, in the house of one of the best artists in Florence. Although Vasari insisted that Castagno's character was quarrelsome, envious, and even diabolical, to the point of publishing in his first edition a fantastic and infamous epitaph in Latin verse, he did justice to his love for art when he narrated that Castagno, on seeing a peasant paint a tabernacle, discovered his "burning desire" for art and began, "on walls and on stone, with pieces of charcoal or with his knife point, to scratch and to draw animals and human figures," to the amazement of the valley people. And Vasari did understand the painter's value as a designer and the crudity of color resulting from his efforts toward plasticity. Nevertheless, Vasari did not confront the problem of Castagno's artistic development. This was first considered by F. Baldinucci (*Notizie dei professori del disegno*, III, Florence, 1728)—who, incidentally, in representing Castagno as a pupil of Masaccio, studying in the Brancacci Chapel in the Carmine, Florence, recorded an inscription formerly on the altarpiece of S. Miniato fra le Torri. This view was repeated by Luigi Lanzi (*Storia pittorica dell'Italia*, I, Bassano, 1795), who relied on Vasari for the remainder of Castagno's history.

In the 19th century, art history concerning Castagno was divided into three categories: documentary research, literary investigation, and pure criticism. The first to rectify or to complete 16th-century sources, both for biographical details and for the works themselves, were G. Gaye, G. Milanesi, and E. Müntz. This work has been continued in this century by C. von Fabriczy, O. H. Giglioli, G. Poggi, G. Gronau, and A. M. Fortuna.

Although some of the works mentioned in the sources have disappeared—in addition to those cited, there was a *Flagellation*, highly praised by Vasari—other notable paintings have been recovered. Thus, in 1847 the major portion of a fresco cycle was discovered in the hall of Villa Pandolfini, formerly Villa Carducci, in Soffiano, on the outskirts of Florence. Sections had been removed at various times, but conspicuous remains were found *in situ* that permitted a reconstruction of the whole (M. Salmi, *Paolo Uccello, Andrea del Castagno, Domenico Veneziano*, 1938, pl. 147). This work was integrated in 1948 with other discoveries, among them a figure of Eve (M. Salmi, *BAste*, 1950). Other finds include the uncovering in 1899 of the fresco *The Trinity* (pls. 236, 237) in the Girolamo Corboli Chapel in the SS. Annunziata (E. Brockhaus, *Ricerche sopra alcuni capolavori di arte fiorentina*, Milan, 1902); the rediscovery in the same church of the *Christ and St. Julian* fresco in the Da Gagliano Chapel (G. Poggi, *RAste*, 1906); the identification of the altarpiece from S. Miniato fra le Torri; and the recovery, about 1892, of the three scenes from the Passion of Christ in the refectory of S. Apollonia. The removal of these last in 1953 revealed Castagno as a powerful draftsman by virtue of the splendid sinopia sketches uncovered (M. Salmi, *BAste*, 1954).

Criticism, which has matured slowly where Castagno is concerned because it often coincided with literary research, has assayed the artistic values of the master in various writings. In the 19th century, J. A. Crowe and G. B. Cavalcaselle (*A New History of Painting in Italy*, London, 1864; 2d ed., ed. R. Langton Douglas and G. de Nicola, IV, London, 1911, pp. 126-37) saw Castagno formed by the influences of Paolo Uccello and the Pesellos. But they misunderstood the then-unknown personality of Giuliano Pesello and ignored the fact that Francesco Pesello was contemporary, or almost so, with Castagno. Considering the artist the creator of a vulgar realism, Berenson (*The Florentine Painters of the Renaissance*, London and New York, 1898) does not always seem to understand his poetic values. He notes Castagno's technical ability but judges the painter

a superficial celebrator of brute force and appreciates only the cycle in the Villa Carducci for its power, nobility, and beauty—that is, for its classical overtones. Seeing Castagno as influenced by Paolo Uccello and by Donatello, Berenson nevertheless ends by considering him the most noteworthy personality of the generation following Masaccio. In substance, O. H. Giglioli agrees with this criticism (*Emporium*, 1905); he concludes that Castagno's impulsive spirit sought for a union with the classical feeling of humanism. A more profound insight is found in H. Thode (*Festschrift für Otto Benndorf*, Vienna, 1898), who, in ascribing to Castagno the mosaic depicting the Dormition in the Mascoli Chapel in St. Mark's in Venice, points out the sense of torment and tension in the large and lony figures of the artist. This mosaic was attributed by A. Venturi (*Storia dell'arte italiana*, VII, Milan, 1914) and others to Mantegna, but Valentiner regards it as Castagno's. E. Schaeffer (*Das Museum*, VII; *ThB*, 19, 1912) followed by praising the artist and specifying the formative elements in his peasantlike and monumental art, which was pre-eminent for its attempt at a coloristic and perspective "evolution." Schaeffer related Castagno to Masaccio for composition and modeling, in an equilibrium between lights and shadows, and to Donatello (repeating Berenson) for impassioned expression. W. Waldschmidt's basic monograph (*Andrea del Castagno*, Berlin, 1900) brings out, by reason of a connection with Donatello and contributions from Masaccio and Paolo Uccello, the sense of calm operating in Castagno's maturity and the impassioned tone of his last period, as well as the paramount influences he exercised on Mantegna and on the Ferrarese.

Although Castagno is now considered one of the pillars of Renaissance painting, F. Antal (*JhbPreussKSamml*, XLVI, 1925) has tried in vain to place him in the late Gothic period, although he notes the resemblance of the artist's later style to that of Donatello. C. Gamba (*El*, III, 1929) is somewhat unclear in his thinking when he describes as "folklike" the formal element in Masaccio, which carries over into the more dramatic aspects of Castagno's work, as opposed to the ideal element seen in Angelico, Pesellino, and Benozzo. K. I. Suter (*ThB*, 1932), maintaining that Pesello painted part of Paolo Schiavo's frescoes in the Collegiata di Castiglione Olona, sees the creator of these paintings as Schiavo's master. (Cavalcaselle is responsible for the hypothesis that Castagno was a disciple of the Pesellos). G. Sinibaldi (*L'Arte*, 1933) finds in the three stories of the Passion in S. Apollonia "rough, instinctive strength," tempered by a refined lunism derived from Piero della Francesca. And R. Deusch (*Pantheon*, 1934) divides Castagno's work into three periods—youthful, mature, and late—in an unacceptable chronology, adding some unconvincing attributions. Salmi (op. cit.) maintains that Castagno was formed in the school of Fra Lippo Lippi, after an initial apprenticeship to some secondary painters. P. Bargellini (*Via Larga*, Florence, 1940) has presented a skillful portrait of Castagno. G. M. Richter's study (*Andrea del Castagno*, Chicago, 1943), produced for a popular audience, proposes on literary grounds the following: Castagno's apprenticeship, suggested by Salmi as having been with an artist of Paolo Schiavo's caliber, to Schiavo himself, with whom he supposedly worked in the Collegiata di Castiglione Olona in 1439; the artist's collaboration on the Trebbio fresco with a painter of more archaic style; and the attribution to Castagno of the *Poggibonsi Triptych* (Duveen Coll., New York). This triptych is, instead, the work of an eclectic Florentine who owed a great deal to Castagno and whom Longhi calls "The Master of Pratovecchio."

The list of works compiled by L. Berti and his painstaking essay must also be mentioned (*Cat. della Mostra di quattro Maestri del primo Rinascimento*, Florence, 1954). An even more up-to-date account of the artist has been written by Maria Ilorster (*Wallraf-Richartz Jhb.*, 1953 and 1955). In her first article, having indicated the sources of the frescoes in Venice (Donatello, Masaccio, and Lippi), the author makes a minute analysis of the works, including the altarpiece for S. Miniato fra le Torri, following Salmi's chronology. In the second, on the period from the cycle in the Villa Carducci to the now-detached *Crucifixion* of S. Apollonia, she adds perceptive, accurate details about the draftsman, to whom she attributes the drawings of two nudes in the Uffizi (110 E), ascribed to the school of Pollaiuolo but weaker than the sinopia sketch. In concluding, she places—rightly in opposition to Antal—the accent on the Masaccio-Donatello tie and on the contribution of Castagno to the development of the new monumental style in the West which culminated in Michelangelo.

Celebrations were held in honor of the artist in 1907 in Castagno, and a speech was delivered by G. Rosadi (*La Nazione*, Sept. 11, 1907); and in 1957 the fifth centenary of the artist's death was marked in Florence at the Palazzo Vecchio (Salmi, *Andrea del Castagno*, Florence, 1957) and in his native town.

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Mario SALMI

Illustrations: PLS. 234-246.

ANDREA DEL SARTO. Painter, born July 14, 1486, in Florence, the son of one Agnolo di Francesco, a tailor (It. *sarto*), whence came his name Agnolo or Andrea del Sarto. According to Vasari, he was apprenticed when seven years old to a goldsmith, afterwards spent three years with the painter Gian Barile, and finished his apprenticeship under Piero di Cosimo.

The first document relating to the painter is his matriculation (Dec. 12, 1508) in the Guild of the Medici e Speziali. Vasari says that Andrea shared a workshop with Franciabigio; and his first frescoes at the Annunziata and in the Church of the Scalzi (*Baptism of Christ*) as well as the medallions in the Refectory of S. Salvi seem to confirm this collaboration. The last of the five frescoes in the atrium of the Annunziata, representing scenes from the life of S. Filippo Benizzi (PL. 251), is dated 1510. (Seven lire were paid to Andrea on Nov. 5 and again on Nov. 21, 1511, for paintings in the same place.) On Dec. 12 he received the balance due for the *Procession of the Magi* and on the 25th of the same month, money on account for the *Birth of the Virgin* (PL. 250), which was not finished and dated until 1514. Probably in 1512-13 Andrea finished the *Parable of the Workers in the Vineyard* (now destroyed); in any case, he received payments on June 25, 1512 and Jan. 7, 1515,

for work done in the garden of the Serviti. The commission for the *Assumption of the Virgin* in the atrium of the Annunziata, later finished by Rosso, is dated June 16, 1515.

The frescoes in the cloister of the Scalzi are first mentioned in 1515; on Nov. 1 Andrea received 72 lire for the *Preaching of the Baptist* and for the *Justice*. In November, 1515, he prepared with Jacopo Sansovino and other artists the decorations for the entry into Florence of Leo X. The friendship with Sansovino seems to go back to 1511, for the sculptor, who moved from Rome to Florence at that time, is portrayed in the *Procession of the Magi*. According to Vasari, he furnished his friend with models of figures. On Oct. 30, 1516, Andrea received 56 lire for decorative pictures in the Scalzi; on Mar. 15, 1517, he was paid for a *St. John Baptizing the Multitude* and on July 19, for the *St. John Made Prisoner*. Also dated 1517 is the *Madonna of the Harpies* (PL. 248). Probably in the same year he married Lucrezia di Bartolomeo del Fede, the widow of Carlo Domenico Berrettai. On May 23, 1518, Andrea acknowledged the receipt of the dowry of his wife.

He accepted an invitation from Francis I to come to France but remained there only from May, 1518, to the beginning of 1519. Of the works done in France we know only the *Charity* (dated 1518). On June 15 he was certainly again in Florence, as on this day he was commissioned to do the *Last Supper* in S. Salvi (PL. 259), which was not executed till later. On Aug. 19, 1520, he received payment for work in the Scalzi (perhaps one of the *Virtues*). On Oct. 15, 1520, he bought a piece of land in Via del Mandorlo, on which he proposed to build a house. From 1521 dates the fresco of the *Tribute Money* in Poggio a Caiano, one of the Medici villas. This painting remained unfinished because of the death of Leo X. On Dec. 6, 1521, there was a payment for work at the Scalzi (perhaps another *Virtue*). On Jan. 20, 1522, he was paid for the *Dance of Salome* and on Feb. 20 for decorative paintings in the Scalzi. On May 2, 1523, there was payment for the *Beheading of the Baptist* and on the 30th for the *Head of the Baptist Presented to Herodias* (PL. 258). The *Annunciation to Zacharias* (the date 1522 is now illegible) and the *Hope* were paid for on Aug. 22, 1523.

In 1523, to escape the plague, Andrea repaired to the valley of the Mugello, where he painted an altarpiece for the nuns of S. Pietro in Luce. On Oct. 11, 1524, he received 80 gold florins for the high-altarpiece and for a *Visitation*. The payment for the *Visitation* of the Scalzi is in November, 1524. Of the same time is the copy of Raphael's *Portrait of Leo X*.

The *Madonna del Sacco* (PL. 255) is dated 1525, and in the same year Andrea was commissioned by the Commune of Florence to make the preliminary drawings for the parapet of the Palazzo della Signoria, for which he received a payment on account on Dec. 14. In the "Libro dei pittori fiorentini" he is entered as follows: "Andrea d'Agnolo del Sarto Dipintore, 1525." The Scalzi *Birth of John the Baptist* was paid for on June 24, 1526, and in the same year in the will of Margherita Passerini there is mentioned an *Assumption* which she had ordered and on which he was working.

On Dec. 27, 1527, Andrea made his will. The *Four Saints* (PL. 256) in the Uffizi and the *Holy Conversation* in Berlin are dated 1528. On Feb. 2, 1529, he was received into the Company of St. Sebastian. In 1529-30, during the siege of Florence, he painted on the façade of the Palazzo del Podestà the likenesses of the captains who had fled and of the civilian rebels. The payment for this work was made to Andrea's shop assistant Bernardo di Girolamo. On Sept. 28, 1530, Andrea added a codicil to his will. He died on Sept. 28 or 29, 1530, of the plague and was buried on the 29th.

Andrea del Sarto was one of the greatest Florentine fresco painters of the Renaissance. The earliest authenticated works are the frescoes in the courtyard of the Servite church of the Annunziata depicting scenes from the life of S. Filippo Benizzi (PL. 251). Although in these youthful works various influences are naturally evident (1st fresco, Masaccio's *The Tribute Money*; 2d fresco, Ghirlandajo's *Funeral of St. Francis*; 3d fresco, interior architecture of S. Salvatore al Monte near Florence), the artist's own style is already apparent. Unlike Baldovinetti and Cosimo Rosselli, who had earlier each executed

a wall painting there, Andrea's work is founded on architectural perspectives that seem to break through the wall itself. The landscape, on the other hand, still follows the Quattrocento formulas; the wooded hilltops, Nordic in feeling, recall in some details the engravings of Dürer. Quattrocento-like also is the practice of depicting various scenes within one frame (1st and 4th frescoes). The succeeding pictures demonstrate a desire to achieve a greater feeling of space with the help of huge theatrical side wings, so that the figures run the risk of becoming figurines. The architectural "ruin" backgrounds recall the detailed, capricious descriptiveness in certain backgrounds of Botticelli and Filippino Lippi. In the *Procession of the Magi*, which is treated as an elegant and worldly scene, the figures, that of the young king especially, reveal the influence of Raphael, and the two figures at the right, who, Vasari tells us, are intended to represent Andrea and his friend Sansovino, recall the corresponding group in the *School of Athens*.

Vasari says that Sarto made a journey to Rome. This is not otherwise documented, but Wagner considers the statement probably accurate and, if so, the journey must have taken place in 1511. In these works there is an obvious influence of Raphael but no trace as yet of Michelangelo. From Raphael, however, the elegance and grace shown especially in the *Procession of the Magi* is adopted only in a formal sense. Bodily beauty is much more sought after in the *Birth of the Virgin* (1514; PL. 250). The influence of Leonardo, which was apparent in the *sfumato* of the *Procession of the Magi*, is here also evident in the feminine types, in the modeling of the figures, in the folds of the dresses, and in the heavier impasto, which all combine to create a sensual atmosphere. No other Florentine achieved such a synthesis of the style of Raphael and Leonardo. In addition, his interest in precise characterization is influenced by Dürer (*The Life of the Virgin*). The problem of the relation of figures to space is solved entirely in the manner of the High Renaissance.

Toward 1512 Sarto began a second fresco cycle in the cloister of the Scalzi, where in ten scenes divided by pilaster-like decorations, he treated the story of the Baptist, a theme already used by Ghirlandajo in S. Maria Novella. At the sides of each of the two doors in the short walls, he painted two *Virtues* in grisaille, which resemble sculptured figures in rectangular niches. Scenes, allegories, and decorations executed in monochrome here reach a new height of illusion. The whole decoration is treated as an organic unity, and the light in each painting comes from a single source. Andrea reveals a thorough knowledge of Dürer's graphic work, of which he was in fact the discoverer in Italy (to the benefit of the next generation), and from which he took some of his figures literally (cf. the *Preaching* and the *Beheading of St. John*). He had other models also: Andrea Sansovino for the *Christ*, the *Justice* of the tomb of A. Sforza in S. Maria del Popolo in Rome for the *Justice*, Verrocchio (*Baptism of Christ*, Uffizi) for the same subject in the Scalzi, Michelangelo (cartoon for the *Battle of Cascina*) for the *Baptism of the Multitude*.

About 1515 Sarto painted on the wall of the great staircase of the cloister of the Serviti the *Ecce Homo* which is now in S. Salvi. At this time he began to strive for a certain monumentality (*Justice*). It is probable that he went to Rome for the second time in 1514 (Ragghianti, 1949) when the Sistine Chapel ceiling was finished. In the *Preaching of St. John* (1515) and in the *Baptism of the Multitude* (1516-17) the figures gain in importance at the expense of the landscape. The succeeding compositions seek after unity, although secondary figures are not wanting: the *Naming of St. John*, the *Presentation of the Head* (PL. 258), the *Annunciation to Zacharias*. The movements are more dynamic, the expressions more pronounced. Nevertheless, the painter does not always succeed in attaining dramatic effects. Venetian influence appears most frequently in the panel paintings (perhaps as a result of a visit to Venice) but is also evident in the latest frescoes of the Scalzi, where we see an increasing tranquillity in the composition and a finer tonal handling in the monochrome technique.

The *Tribute Money* (1521) in Poggio a Caiano, because of its allegorical significance, is the first example of a literary inter-

est which was to become increasingly evident. There is little concern with the main episode, much more with the genre-like scenes in the foreground, which are handled with great pictorial intensity. Various elements derive from the tapestry designs of Raphael. (A third of the fresco was painted by Allori as late as 1570.)

A chef d'œuvre of the master is the well-known lunette painting, the *Madonna del Sacco* (PL. 255) of 1525 in the cloister of the Annunziata, whose immediate antecedent is the *Jurisdiction* of Raphael (Stanza della Segnatura). The illusion of space is here enormously increased by the choice of a low vanishing point and by the enrichment of the architectural elements. Sarto here tries to combine Venetian color with Roman form.

At S. Salvi, where Andrea had painted five medallions, probably in collaboration with Franciabigio, he provides a last example of monumentality in the *Last Supper*. This fresco derives very strictly from Marcantonio's engraving of Leonardo's *Last Supper*. However, it is not the psychological drama but the fusion of form and color which is here in the forefront of the artist's intention. This is particularly striking in the balcony scene, which in its light and varied color seems to point the way to Paolo Veronese.

The catalogue of the works of the artist is long (some 50 works in addition to the drawings). Among the frescoes we can list two which are lost: the *Parable of the Workers in the Vineyard* (formerly in the garden of the Serviti) circa 1512-13, known to us from the engravings of Hieronymus Cock (Knapp), and the *Madonna of Porta Pinti*, circa 1514 (Ragghianti), known through a drawing after this Madonna perserved in the Albertina (Knapp).

Panel painting reveals Sarto's gifts as a colorist. The *Head of Christ* (ca. 1511) in the Annunziata is particularly close to Leonardo. The *Annunciation* in the Pitti (ca. 1514) reveals the influence of Albertinelli and inaugurates the "sculptural period" of the artist. The *Holy Family* in the Louvre (ca. 1515) recalls the *Madonna Canigiani* of the school of Raphael, in which the crowded grouping of the figures is of importance, since it is somewhat analogous to mannerist composition. It is above all in the panel paintings, culminating in the *Madonna of the Harpies* (1517; PL. 248), that the connection with Fra Bartolommeo becomes evident. The plasticity, the pathos and expressiveness, the rigorous symmetry of the Madonna are all explained by the model of Fra Bartolommeo's *Salvator Mundi*. Sarto's figures appear in the shadowy space as colored masses. However, in his paintings the emphatic rhetoric of Fra Bartolommeo is reduced to a mobile, expressive play of the features with certain sensuous undertones. The *Dispute over the Trinity* (1517) is characterized by delicate color and by a vague twilight background and in sentiment reveals the sensitivity, at once melancholy and passionate, of the painter. The *Charity* in the Louvre (1518) suggests a renewal of Leonardo's influence, perhaps from works of that master which Andrea saw in France. This new contact had surprising consequences: while his initial confrontation with Leonardo's work had encouraged his naturalistic bent, the second one seems to have impelled him to a deliberate, geometrically worked-out abstractionism with vitreous color harmonies.

Between 1515 and 1520 Sarto collaborated on the decoration of a room for Pier Francesco Borgherini, painting two of the sixteen panels of the *Story of Joseph* that survived the dismemberment of the series: *Vicissitudes of the Boy Joseph*; *Pharaoh's Dreams* (PL. 254), Florence, Pitti, Galleria Palatina.

In the Pitti *Deposition* (1524, PL. 253) a warm golden tonality creates chromatic unity. The psychological expression is more quiet and the landscape more atmospheric. The connection with Venetian painting is apparent. The probable journey of Andrea to Venice must have taken place in 1513 (Fraenckel), when his friend Sansovino was living there. Some elements in the landscape of the *Deposition* and in the *Sacrifice of Isaac* in Dresden (ca. 1526), works which incidentally show a study of the *Laocoön*, point to the influence of Giovanni Bellini, Giorgione, Palma Vecchio, and the young Titian. To this group of works, which fuse Venetian elements with Roman-Florentine form, belong also the *Madonna della Scala* in the

Prado, the *St. James* in the Uffizi, the *Youthful St. John* in the Pitti, and the *Pietà* in Vienna (all ca. 1525). In the Pisa altarpiece (PL. 252), originally in six parts, the influence of Correggio suddenly appears in the handling of the drapery folds, in the transitions of color, and in the childlike expression of the feminine faces. In this altarpiece, judging from what Vasari says and by what can be gathered from the perspective and measurements of the remaining fragments, there were represented: below, St. Catherine, St. Agnes, and St. Margaret; above, two panels with St. John and St. Peter flanking an ancient image of the Madonna (Wagner).

With the *Madonna with Six Saints* in the Pitti (ca. 1528) and the *Holy Conversation* of Berlin (1528) may be grouped two large representations of the *Assumption*, likewise in the Pitti (ca. 1526 and ca. 1530; PL. 249) notable for the naturalism of the figures, the contrasts of light and shade, the heightened pathos, and the unity of the groups.

Additional works include: *Holy Family with St. Elizabeth* (ca. 1528, Pitti); *Four Saints and Two Putti* (1528, Uffizi); the *Madonna* (ca. 1528-30, London, Wallace Coll.); the *Borgherini Madonna* (New York, Met. Mus.); the *Assumption with Four Saints* finished in 1540 by V. di Francesco de' Bonilli (Pitti); a parament for Cardinal Silvio Passerini (ca. 1514, Cortona, Mus.). For workshop pieces see Fraenckel (op. cit. p. 162, ff.). Among the losses one of the more serious is that of the *Pietà* (ca. 1515-16) which was sent to France and engraved by A. Veneziano in 1516.

The most important portrait by Andrea is *The Sculptor* (PL. 247) in London. The person represented is probably Jacopo Sansovino and the date about 1524 (Wagner). From the last years date the *Portrait of a Young Girl* and a *Self-Portrait*, both in the Uffizi. The portraits of Lucrezia del Fede in the Prado and in Berlin are works by followers (Fraenckel). Vasari attributes to the artist a copy after Raphael of the *Portrait of Leo X* (Naples, Pin. Naz.).

In the drawings which have survived (PL. 256), most of which are in the Uffizi, in the Louvre, and in the British Museum, Andrea del Sarto appears more spontaneous and unconventional than he does in the panel paintings. With a few exceptions, these drawings consist of studies of details of heads, hands, draperies, etc., all done with sureness and precision.

Andrea del Sarto, together with Fra Bartolommeo, is the greatest master of the Florentine High Renaissance. But he is not so much the culminating point of this movement as he is the point of departure of Tuscan mannerism.

Although he left no pupils in the true sense of the word, Vasari tells us that Pontormo, Rosso, and he himself worked in the atelier of Andrea, a fact which establishes his importance as an originator of the new style.

CRITICISM. Vasari in the introduction to the third part of his *Lives* speaks of Andrea del Sarto's "faultless works" and compares him to Raphael but qualifies this praise later when in the biography of the artist he writes: "If Andrea had been somewhat bolder and more ardent in spirit, since he had great talent and profound judgment in this art, he would have had, without question, no equals. But a certain timidity, humility, and simplicity in him never permitted the emergence of that vivacity and ardor which, if joined to his other qualities, would have made him a painter truly divine. As it was, he lacked the grandeur and amplitude of manner which are to be seen in many other painters."

E. Bocchi (*Le bellezze della Città di Fiorenza*, 1581) places Andrea above Raphael and Michelangelo: "Raphael is marvelous in painting, Buonarroto sublime in drawing, Andrea miraculous in imitating nature; Raphael is first in color, Michelangelo has no equals in drawing, but Andrea is finest in giving relief to his figures and in representing things not otherwise than God has made them."

R. Borghini (*Il Riposo*, Florence, 1584) follows Vasari in general, as does F. Baldinucci (*Delle Notizie de' professori del Disegno da Cimabue in qua*, Florence, 1681), according to whom Andrea del Sarto belongs to that class of person who "having a certain amount of false humility and being altogether too diffident, much to their own and to the world's disadvantage, never put themselves to these tests which would infallibly allow them to reach incomparable heights."

L. Lanzi (*Storia pittorica dell'Italia*, 1789) shows a great sympathy for Andrea del Sarto, while at the same time observing the distance

at which he lies from the heroic ideal of Michelangelo and says, "Indeed there was lacking in him the elevation of ideas that forms the poets and the heroic painters. Andrea was not endowed with this gift: modest, gentle, sensitive by nature, he impressed the same character on all his works. Whoever feels the quality of Tibullus as a poet will understand the sensibility of Andrea in painting."

A. Venturi was the first to explain the limitations of the artist by emphasizing his eclecticism, his strong inclination to formalism and virtuosity, and by underlining his susceptibility to diverse influences. He stresses instead Andrea's drawing: "Whoever has seen the page in the Louvre with the three small figures, so light, so indefinite in the misty, pearly background as if formed by snowflakes, will be able to measure the exact worth of Andrea at those moments when, forgetting the Florentine world around him, he abandons himself to his own pictorial temperament, and finds himself. At such times he is with Correggio the only true heir of Leonardo."

Only C. L. Ragghianti (*CrArte*, 1949, pp. 123-4) has attempted to reevaluate the art of the master, particularly with respect to the Scalzi frescoes, and speaks of: "An atmosphere tragic and abstracted, excluding all abandon and all useless narrative and description. Figures memorably mysterious, as for instance, some of the listeners in the *Preaching of the Baptist*, who are funereally cloaked not in the manner of Giotto or Ghirlandajo, but with a taste recalling Michelangelo's touching copies of the massive male figures of Giotto and Masaccio — a crowd of featureless people and tense, saturnine women, all cloaked and silent as stone. A concentration in the picture and in the action which does not admit of communication with the spectator and even goes so far as to create in him the anxiety which is felt by the excluded. And in the whole a triumphal, if suffering, vitality, imperiously present in the self-reliant figures, together with a degree of energy seldom equaled."

In non-Italian criticism, Andrea del Sarto has not been put among the greatest masters. For A. Félibien (*Entretien sur les vies et sur les ouvrages des plus excellents peintres*, Paris, 1666), he is an academician: "There is not enough in him of that warmth and fire which painters need to animate their figures, nor is there that pride in strength and nobility which arouses admiration. These things are, in some way, lacking in his works, in which we do not see the richness of composition, the variety of expression, and the loftiness in the realm of ideas which would have made them much more praiseworthy." J. Burckhardt (*Der Cicerone*, Basel, 1860) and H. Wölfflin (*Die klassische Kunst*, Munich, 1899) make similar judgments. Burckhardt writes: "An exceptional spirit, but limited. He was one of the greatest technical innovators in painting, but he lacks all that which we can put under the head of the 'beautiful soul.' The impulses by which he is governed are purely those of an artisan: he solves problems. Hence his indifference toward the higher beauty of expression." And Wölfflin: "Andrea has been called superficial and without soul, and it is true: some paintings of his leave one indifferent, and in his later years he slid into a routine. Among talents of the first order he is the only one who seems to have had a defect in his spiritual constitution. Still, from the beginning, he is the artistic descendant of Filippino and Leonardo, very selective in his taste, a decorous painter, somewhat soft and passive in his attitude, but a master of the noble gesture."

A. Reumont (1835), published the first monograph on the life and works of Andrea del Sarto, which contained a catalogue listing 90 works. He, too, noted the lack of the "ideal" in the figures. As a neoclassical critic he had little feeling for the naturalistic side of Sarto and for his color sensibility. H. Guinness (1899) reduced the list to 77 works, and like Reumont, depended on Vasari. Scientifically useful are the monographs of F. Knapp (1907) and I. Fraenckel (1935). Knapp's *Catalogue* notes 87 pictures (including those which are lost) and 117 drawings. Knapp praises the color of the master, observing how in all his works stylistic problems are to the fore. "For him all that was human became increasingly unimportant; in fact, he was so entirely an artist that the expression 'art for art's sake' is most apt. By systematically ignoring all spiritual content he came decidedly to overvalue the artistic and esthetic side of things." Fraenckel's book is fundamental for a study of the master. The catalogue *raisonné* reduces the number of frescoes and other pictures to about 50 and the drawings to about 70, and to this is added a register of the atelier works and of attributed paintings. Fraenckel, compared with Knapp, emphasizes the Venetian origin (in the 1520s) of Andrea's color, rejects the accusation of formalism, and seeks to portray Andrea as a pure exponent of classicism — although, exceptionally for his time, he had had no direct contact of any sort with classical antiquity. This thesis is opposed by E. Wagner (1950), who tries to clarify the position of Andrea as between Renaissance and mannerism, noting how, in spite of his reticent nature, or perhaps because of it, he is closer to the immediately succeeding age than he is to classicism. In his devotional pictures Andrea was the first to be subjective; by his systematic exploration of problems of form, he opens a path

academicism, while in his naturalism, he appears as a precursor of mannerism and the baroque.

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Illustrations: PLS. 247-259.

ANDREA DI CIONE. See ORCAGNA.

ANDREA PISANO. See ANDREA DA PONTEDERA.

ANGELICO, FRATE GIOVANNI DA FIESOLE OR DA FIRENZE, called "Il Beato" and, in secular life, "Guido di Pietro." Born at Vicchio in the Mugello about 1400; died in Rome on Feb. 18, 1455. This assignment of the date of Angelico's birth to about 1400 is based on recently discovered evidence (S. Orlandi, p. 161) that has disproved the date 1387 or 1388 given by Vasari. The age ascribed by Vasari to the painter at his death varies, being sixty-nine in the first edition and sixty-eight in the second. The new documentary evidence is the result of a more careful reading of the *Quadripartite Chronicle* in the monastery of S. Domenico at Fiesole, from which Vasari, too, may have drawn his information; and this is confirmed by another document, which states that Angelico was still a layman in 1417 and calls him a painter from then on (W. Cohn, p. 207). Hence his reception of the habit, wrongly dated by the *Quadripartite Chronicle* in 1407, must have taken place some time between 1418 and 1420, and his consequent ordination in the Dominican Order between 1423 and 1425; the monastic surname which he then assumed changed, in the course of time, from the "de Mugello" of the earliest documents to the later "de fesulus" and "de florentia." The nickname "Angelico" is first found in the *Theoticon* of Fra Domenico da Corella (1469); "Beato" is a later attribute and was never, of course, official.

The first documentary evidence of what is probably a work by Angelico is a bill of 1430 from the monastery of S. Domenico at Fiesole for a painting on panel supplied to the monastery of S. Pietro Martire in Florence, which some have identified with the triptych now in the Museo di S. Marco, a picture known to have come from S. Pietro Martire (Orlandi, p. 180). Then, in 1432, he painted an *Annunciation* for the Servites of S. Alessandro in Brescia (now lost; Marchese, p. 549). On July 11, 1433, the "Compagnia dei Linaiuoli" (the Linen Guild of Florence) commissioned him to paint the famous *Madonna of the Linen Guild* (PLS. 263, 269) now in the Museo di S. Marco (see Gualandi, p. 110). It may have been in 1436 that he executed the *Deposition*, now in the Museo di S. Marco (Orlandi, p. 171, where he points out that, strictly speaking, there is no absolute certainty that the *Deposition* is identical with the picture of the same subject mentioned in the Appendix, doc. IX A, p. 190; nor can we be certain of the exact date of the consecration of the altar). In 1437, he probably painted the polyptych of the *Virgin and Child Enthroned* (PLS. 267, side panel; 269, central panel) now in the Galleria Nazionale dell'Umbria, Perugia, and formerly in the Church of S. Domenico in Perugia (T. Bottonio, II, c. 72). The whole of his varied work for the church and monastery of S. Marco, Florence, must be assigned to the years between 1438 and 1445, at least 20

cells in the monastery having been definitely habitable by 1438, and 1445 being the year of Angelico's first journey to Rome. More specific, though still rather elastic, dates can be deduced only for the altarpiece for the high altar — between 1439, when the choir was completed, and 1443, when the church was consecrated (Orlandi, pp. 173-4; *Catalogue*, Angelico Exhibition, pp. 87-8). His first visit to Rome took place between 1445 and 1448, and it is more than probable that while there he painted, besides the frescoes in the Cappella del Sacramento and in a study of Pope Nicholas V (both lost), the fresco cycle in the Chapel of Nicholas V with *Scenes from the Lives of SS. Stephen and Lawrence* (PL. 270). It is possible that the execution of this cycle was protracted, extending even through the years 1448-50, when Angelico was prior of the monastery of S. Domenico at Fiesole (there is a receipt for this work, dated 1449; see Marchese I, doc. IX, p. 552; and we know that the marble floor in the chapel was laid in 1451; see D. R. de Campos, *Catalogue*, Angelico Exhibition, p. 102). But it is improbable that they were executed during his second visit to Rome, which was of brief duration and soon cut short by death. In the summer months of 1447, together with Benozzo Gozzoli, Giovanni d'Antonio, Giacomo d'Antonio da Poli, and Pietro di Niccolò of Orvieto he began to paint the vault of the Chapel of the Corporal (Cappella della Madonna di S. Rizio) in Orvieto Cathedral. Piero de' Medici's commission for the panels of the silver chest (*armadio degli argenti*) in the SS. Annunziata in Florence (PL. 265), now in the Museo di S. Marco, may date back to 1448, but it is generally believed, for reasons of style, that the work was not actually begun until the years following (see Orlandi, p. 177; *Catalogue*, Angelico Exhibition, p. 76). Finally, in 1452 he declined an invitation to decorate the choir of Prato Cathedral, a task afterward undertaken by Fra Filippo Lippi (Marchese, I, pp. 384-85).

The earliest group of Angelico's better-known works is usually assigned to the period between about 1425 and 1430; but this terminal date is too close in time to already mature work such as the *Madonna of the Linen Guild* (1433) and there is too large a gap after the first documentary evidence of his being an accepted painter (1417). Before hypotheses are advanced to fill this problematical gap, it is necessary to list the small group of works that can be assigned to the years between 1425 and 1430 or 1433. Among these, the *Triptych* painted for the monastery of S. Pietro Martire (now in the Museo di S. Marco) appears to be of an early date, because of both the documentary evidence mentioned above and well-defined characteristics of form (cf. *Catalogue*, Angelico Exhibition, no. 13, p. 14). It is customary to associate with this the *Virgin and Child Enthroned with Eight Angels* in the Church of S. Domenico at Fiesole, or at any rate the greater part of it (its original arrangement as a triptych was modified by Lorenzo di Credi in about 1501) and its original components, the predella, *Christ Glorified in the Court of Heaven*, in the National Gallery, London, and the panel known as the "Stroganoff Tabernacle" is in the Hermitage, Leningrad, if, as is probable, this is the ciborium mentioned by Vasari. The other parts of the triptych still in position or scattered in various collections (Chantilly, Sheffield, Vienna, Turin) either are of uncertain attribution, in which case their connection with the whole can only be hypothetical, or else must be supposed to be genuine works painted some years later than the earlier parts (cf. *Catalogue*, Angelico Exhibition, no. 6, pp. 12-15). With these two fundamental works may be associated the *Madonna and Child Enthroned with a Trinity* in the upper part of the frame (Museo di S. Marco); the little panel of the *Virgin and Child Enthroned with Twelve Angels* in the Städel Institute, Frankfurt; the *Madonna and Child with SS. John the Baptist, Dominic, Francis, and Paul* in the Pinacoteca, Parma; and the *Madonna della Stella* (PL. 260) and the *Annunciation and Adoration of the Magi*, both in the Museo di S. Marco. This is a fairly homogeneous group, but there is a certain inconsistency about it which critics usually reduce to a problem of attribution. Presumably it is in just this group that one can best observe the choice of alternative forms between which Angelico seems to have oscillated during his early period. It is probable that the Fiesole *Virgin and Child*

was painted, as is generally believed, toward 1430 and that it contains symptoms, similar to those observable in Masolino's work of the same time, of a slight retrogression from what might be called the proto-Renaissance approach. However, signs of this approach, undoubtedly due to the sudden emergence of Masaccio, are to be found in the S. Pietro Martire triptych, which should in consequence be dated 1425-26. Allied to this preliminary phase represented by the S. Pietro Martire triptych is the *Madonna and Child Enthroned with the Trinity* in the Museo di S. Marco; works that represent an extension of this phase and hence were influenced in varying degrees by the discoveries of Masaccio include the *Parma Madonna and Child* (for conflicting attributions, see *Catalogue*, Angelico Exhibition, no. 14, p. 26), the little panel in Frankfurt, and the Fiesole frescoes: *Christ on the Cross* in the chapter room of the monastery of S. Domenico, *Christ on the Cross Adored by St. Dominic with the Virgin and St. John* in the Louvre, Paris, and the *Virgin and Child between SS. Dominic and Thomas Aquinas* in the Hermitage, Leningrad.

As a hypothesis, Longhi (1940), assuming an earlier and closer connection between Angelico and Masaccio, has put forward the possibility of a period of work, earlier than the one just described, within which would fall the following attributed works: *Two Scenes from the Legend of a Holy Hermit*, drawings in ink and water color in the Albright Art Gallery, Buffalo; the *Thebaid* in the Uffizi Gallery, Florence, generally given to Starnina; *St. Jerome Penitent* in the Art Museum of Princeton University, for which the date 1424 has been advanced. In the period between the years 1425 and 1430, Longhi places first a group of works (*Madonna and Child with Two Angels*, Van Beuningen Coll., Vierhouten; *Madonna and Child with Four Angels*, Hermitage, Leningrad; also the Frankfurt *Virgin and Child*; the two panels of SS. Mark and Matthew from the Fiesole triptych, now at Chantilly; and the predella of the *Pietà and Five Saints* in the Gambier-Parry Coll., Gloucester) that, he maintains, show the change in style mentioned above, which he ascribes to the influence of Gentile da Fabriano. Longhi includes in the same period another small group, painted very shortly afterward and showing traces of a renewal of Masaccio's influence: *Virgin and Child with Angels* (Nat. Gall., London); *The Naming of the Baptist* (PL. 271; Mus. di S. Marco) and *St. James the Great Freeing Hermogenes* (Duc des Cars Coll., Paris), grouped together as perhaps once forming part of the same predella; *The Nativity and the Agony in the Garden* (Pinacoteca, Forlì); the *Miracle of SS. Cosmas and Damian* (E. G. Spencer Churchill Coll., Northwick Park, Gloucestershire, England), thought by Longhi to be painted in collaboration with Andrea di Giusto; and *St. Julian Penitent* (Mus. Thomas Henry, Cherbourg).

Collobi Ragghianti (1955), on the other hand, tends to put the date of the Fiesole triptych back to 1420-22, relating it to works such as the S. Marco *Madonna*, the Van Beuningen *Madonna*, the Leningrad *Madonna*, the Gambier-Parry *Pietà and Five Saints*, and the "Stroganoff Tabernacle." She ascribes this "traditional" phase in Angelico's work to the influence of Gentile da Fabriano more than to that of Lorenzo Monaco and believes it took place before the Masaccio period of the Princeton *St. Jerome*, the *Thebaid*, the *Naming of the Baptist*, and *St. James the Great* in the Des Cars Collection, to which she adds two lateral wings of a triptych representing SS. Francis, Jerome, John the Baptist, and Benedict, which comes from the Certosa of Florence and is now in the Uffizi cellars. In a later essay (1955) she brings the date of the Fiesole *Madonna* as far forward as 1435 and accepts 1428-29 as a probable date for the S. Pietro Martire triptych.

Salmi (1950) has upheld the attribution to Angelico of some miniatures in the *Diurno Domenicale* No. 3 in the Laurentian Library, Florence; but, as a result of the recent correction in the years of Angelico's birth, he changes the date from 1409 (the year inscribed on the volume) to 1420 or thereabouts. If we are to judge by these miniatures, Angelico's early artistic education goes back to Lorenzo Monaco, with some incipient influence of Ghiberti. Salmi considers the S. Marco *Madonna* closely allied to them in time and style and so separates it by

about a decade from the Fiesole *Virgin*, the S. Pietro Martire triptych (for which he hypothesizes the help of a collaborator), and the Parma *Madonna*. In the intervening years Salmi places instead the *Madonna della Stella* (in which he stresses the influence of Masaccio and Donatello), *The Annunciation and Adoration of the Magi*, and the *Last Judgment* in the Museo di S. Marco (PL. 261), besides the Uffizi *Coronation of the Virgin* (ca. 1428), to which he assigns as a predella the S. Marco *Marriage and Burial of the Virgin*. From the stylistic point of view, this chronological arrangement would illustrate the simultaneous development of two different but noncontradictory sides of Angelico.

If none of these hypotheses is accepted and the attempt is made to reconstruct Angelico's artistic formation from only those works that are certainly early, if not the very first, it is impossible to go any further back than the 1424-25 period, to which may belong the S. Pietro Martire triptych and the S. Marco *Madonna*. However, the relative maturity of these works makes it likely that with them should be classed other pictures whose stylistic differences are related more to some internal factor in Angelico's method of creation than to a lapse in time. Longhi's dovetailing arrangement, which shows a clear break between the Princeton *St. Jerome* and the *Naming of the Baptist*—a break formed by works such as the Van Beuningen *Madonna*—greatly facilitates this new approach to Angelico; and it was to this that Salmi first turned his attention. It can be assumed, then, that all the works mentioned at the beginning date back to a relatively short span of years (1424-30). It is their cohesive character, more than the contrasts and variations that can be isolated within each one, that presents a definite problem in critical interpretation, and this problem involves the very meaning of Angelico's art, from beginning to end.

The present imperfect approach to the problem is likely to center on the question of whether Angelico was in harmony with the spirit of the age in which he lived. But this way of considering the matter, although it is generally accepted, is unhistorical and oversimplified. For example, Berenson classes Angelico in the Trecento tradition and Pope-Hennessy defines him as "reactionary" when compared to the true artists of the early Renaissance. These judgments echo the more general affirmations of Lanzi and Cavalcaselle. Argan was the first to break with the traditional view; according to him, the uniqueness of Angelico's work within the Renaissance is not due to any backwardness of artistic education or to inability to cope with the spirit of the age but springs from Angelico's particular Thomist view of religion. The rationalism of Alberti's visual theories was, according to this view, modified by Angelico's "naturalistic" vision, and Alberti's values at the same time converted into absolute religious terms. This hypothesis is supported by a critical examination of the formal qualities of Angelico's work, and we shall return to it later.

The art of Angelico is isolated between the two principal veins of painting stemming from Masaccio—the "volumetric" one of Paolo Uccello and Piero della Francesca, and the "linear" one of Fra Filippo Lippi and Andrea del Castagno. In a way it represents a third vein, not, like the others, concerned with a plastic definition of form, but dealing with definition by means of color, a definition always seen in the typically Renaissance terms of space perspective. But it must be remembered that at this point in history there were only two alternatives: the Gothic tradition and Masaccio. Angelico immediately adopted Masaccio's naturalistic treatment of light and space, deriving from Lorenzo Monaco and his group of miniaturists, as well as the general pre-Renaissance arrangement and conception, in which have been found traces of varying influences: Masolino, Gentile da Fabriano, and the young Ghiberti. This mixture of influences was characteristic of Angelico and was never to vanish completely, although at an early stage in his career these influences declined in importance and were soon replaced by those aspects of his art which critics describe as "purist" or "neo-Giottesque." The latter alternate with strongly "naturalistic" details, as in the famous predellas, or, as in the S. Marco frescoes, with sudden rigidities of form in which many have seen religious symbolism. When we come at last

to the decisive moment in his quest, the *Scenes from the Lives of SS. Stephen and Lawrence* in the Vatican, these contrasting aspects meet to form a conception of art which, even in its close harmony with the most advanced Renaissance spirit, still catches any connection with the now homogeneous course of contemporary Florentine painting and which can be linked only to Masaccio's frescoes in the Brancacci Chapel (S. Maria del Carmine, Florence).

Angelico treats color as preeminent, and this compels him to bring out *ex novo* the relationship between this medium and elements more particular to the Florentine vision: space, volume, and plastic qualities. When he suddenly sees a disparity in this relationship, he settles on a compromise; he is ready to work by the new Renaissance conditions of technique, to take abstract geometric clarity and give it visual reality in order to express the innermost meaning of his art in a more symmetrical and fluent rhythm; he transforms the great orchestrations of Masaccio or Brunelleschi into a simple and intense continuum. It is Angelico's use of color that prevents the marring of the composition by certain elements noted by various critics — an excess of descriptive naturalism and a straining of his vision to the extent that one is reminded of Flemish painting. Color by itself, as Angelico's development revealed, can give a sense of depth to an image; this characteristic involves the vital internal coherence of a painter's work, and from it we may be able to deduce the chronological order of the works. The principle unifying their external differences, which critics have correctly recognized, should also be revealed in the inner dialectic of Angelico's creative processes.

Another small group of works, painted in a short space of time, may perhaps be dated before the *Madonna of the Linen Guild* (1433). The earliest of these are associated with the years preceding and following 1428–30, that is, to the transitional phase of the Parma *Madonna*, the Fiesole frescoes, and the Fiesole *Virgin*. They are: *Madonna and Child with SS. Dominic and Peter Martyr* (Staat. Mus., Berlin); the two panels of the *Angel of the Annunciation* and *The Annunciation* (Mrs. Edsel Ford Coll., Detroit), poorly preserved; *Madonna and Child with Two Angels* (Duke of Alba Coll., Madrid); the *Pietà and Five Saints* (Gambier-Parry Coll.); and the *Madonna della Stella* already mentioned. The latter does not necessarily form a series with the other altarpiece in the Museo di S. Marco, *The Annunciation and Adoration of the Magi*, which seems to evidence a transition to a new style and may be of a later date than the Fiesole *Virgin* (for the S. Marco altarpieces, see *Catalogue*, Angelico Exhibition, pp. 7–10). The more pronounced coloring in the *Madonna and Child with SS. Dominic and Catherine* confirms the theory that it may have been painted at about this time. In short, the *Madonna of the Linen Guild* illustrates a phase of Angelico's effort to reconcile color and plasticity; the *Naming of the Baptist* and *St. James the Great Freeing Hermogenes* also fall into this class.

At this point the possibility of a parallel creative development is confirmed by the important alternative represented by *The Annunciation* (PL. 261) in the Museo Diocesano, Cortona. Critics have placed this work either before or after 1433 without in either case examining the criteria which would explain such divergent dates. The external characteristics of the picture may seem contradictory, and in support of one thesis or another it has been called both archaistic and ahead of its time (dated 1428–30 by Collobi Ragghianti, about 1430 by Pope-Hennessy, and 1438 by Salmi and Baldini), but its internal coherence is clearly the result of the way in which, starting from a different standpoint, Angelico solves that very problem of form which he encountered in the *Madonna of the Linen Guild*. In both cases Angelico is seeking a clear-cut mastery of plasticity through the medium of color. In the triptych, he does not concern himself with the space surrounding the object, which itself expresses, with the kind of power in which one recognizes the influence of contemporary sculpture, a certain volume through the plastic and chromatic qualities of the painting. In *The Annunciation*, on the other hand, by relating the figures to the surrounding architecture and landscape, he represents the chromatic plasticity he is seeking. Obviously the

link between the two works — their root in the same moment of experiment and research — however certainly it may be proved, does not put them in any kind of chronological sequence. Besides, by comparing them to works definitely known to have been painted later — although even in these the alternative formal tendencies have analogous results — it may be inferred that Angelico's greatest success in his attempt to represent space in terms of color was the *Madonna of the Linen Guild*. In it, color almost succeeds in assuming a space perspective of its own, although in reality the effect of space perspective depends on plasticity. And it is on this basis that there seems to be a coherent development from the triptych to slightly later works such as the *Coronation of the Virgin* (Louvre), where the painter has obviously sought to deepen the space perspective by both chromatic and plastic methods.

Finally, the close connection between the *Madonna of the Linen Guild* and the Cortona *Annunciation* allows us, as Longhi suggests, to link stylistically several paintings that have substantial affinities with the *Annunciation* (St. Julian Penitent, Mus. Thomas Henry, Cherbourg; *The Nativity and the Agony in the Garden*, both Pinacoteca, Forlì) and relate them to the *Naming of the Baptist* (Mus. di S. Marco) and its twin panel, *St. James the Great Freeing Hermogenes* (Des Cars Coll.). On the other hand, the *Annunciation* in the Prado, Madrid, and the *Annunciation* in the Church of S. Francesco, Montecarlo, near Florence, seem unrelated to the Cortona *Annunciation*. The Montecarlo picture may be genuine but must have been painted about 1437–38, although most critics agree in putting the date as far forward as 1440, the time of the S. Marco frescoes. The attribution of this picture is much disputed (see *Catalogue*, Angelico Exhibition, no. 38, pp. 63–4). The Prado *Annunciation*, described by Vasari when it was in the monastery of S. Domenico at Fiesole, is somewhat later and may perhaps be by Zanobi Strozzi (Collobi Ragghianti, Pope-Hennessy).

As we have already seen, the most probable date for the Louvre *Coronation of the Virgin* is about 1434–35. If we accept the conclusions drawn by Orlandi from the relevant documents, it was followed immediately (1435–36) by the *Deposition* (PLS. 264, 268), now in the Museo di S. Marco; thus the differences between the two works give further confirmation of Angelico's fluctuation between two extremes of technique. Critics have suggested the hands of various assistants in both pictures. Undoubtedly from then on collaboration in Angelico's work became more and more frequent, although it can be specifically found only in the predella of the Louvre *Coronation* and in two doubtful pictures of about this date: the *Last Judgment*, in the Museo di S. Marco, and the S. Maria Nuova *Coronation of the Virgin*, in the Uffizi. But the main problem is still the chronological arrangement of the genuine works painted before he started working for the monastery of S. Marco (ca. 1438).

Setting aside a small group of minor works (including *Three Saints*, Lindenau Mus., Altenburg; *St. Thomas Aquinas*, in a private Italian collection; and a *St. Peter Martyr*, Coll. of H. M. the Queen, London — all from the Louvre *Coronation* period) and making a sharp break, we come to the triptych painted for the Church of S. Domenico in Cortona (*Virgin and Child Enthroned between SS. John the Evangelist, John the Baptist, Mark, and Mary Magdalen*) and the so-called "Madonna Annalena," (*Virgin and Child with Saints*, PL. 262) in the Museo di S. Marco. We should also relate to the Cortona triptych the half-destroyed frescoed lunette (*Virgin and Child with SS. Dominic and Peter Martyr*) above the west door of the same church. These pictures should precede the polyptych in the Galleria Nazionale dell'Umbria, Perugia (*Virgin and Child Enthroned with Angels between SS. Dominic, Nicholas of Bari, John the Baptist, and Catherine of Alexandria*), for which the traditional date of 1437 is acceptable. *The Deposition* (Mus. di S. Marco) seems to come immediately after this; with it are associated the *Christ Crowned with Thorns* in the Church of S. Maria del Soccorso in Leghorn and the Montecarlo *Annunciation*. We may include in this phase, but as a minor aspect of it, the *Temptation of St. Anthony the Abbot* (Mus. of Fine Arts, Houston, Tex.) as a consequence of Pope-Hennessy's indication (1952) of the stylistic connection between

The Deposition and the predella of the S. Marco *Virgin*. This painting fixes 1439-43 as the latest possible date for the whole group and, being an easel picture like the rest, represents the end of Angelico's quest for style better than the contemporary frescoes in the monastery (for the exact terms of Salmi's reconstruction of the dismembered predella, see *Catalogue*, Angelico Exhibition, nos. 39-43, p. 67 ff.; cf. also Baldini, p. 78 ff.).

With the foregoing are associated certain works on which must be based the study and differentiation of Angelico's assistants. The earliest go no further back than the Cortona *Annunciation*, although parts of the predella (London, Nat. Gall.) of the Fiesole *Virgin* are occasionally attributed to Zanobi Strozzi. The two predella panels, probably genuine, of the *Stigmatization of St. Francis* (Mus. Vat.) and *St. Francis before the Sultan* (Lindenau Mus., Altenburg) form part of a series with three other scenes from the life of St. Francis (*The Meeting of SS. Francis and Dominic*, *The Death of St. Francis*, *The Apparition of St. Francis at Arles*, all in the Staat. Mus. Berlin), the work of a pupil and wrongly believed by many critics to be part of a late work by Angelico, the so-called "Bosco ai Frati" Altarpiece (*Virgin and Child with Two Angels*) in the Museo di S. Marco, currently dated anywhere between 1440 and 1450. They show a distinct affinity with the two panels at Forlì (*The Nativity* and the *Agony in the Garden*), and this may furnish a clue to their date. The painter would seem to have been the first of Angelico's assistants, and his work bears some resemblance to the Uffizi *Thebaid* (supposedly by Starina) and even to early pictures by Lippi; to him we may attribute the *Meeting of St. Francis and St. Dominic* (De Young Mus., San Francisco, Samuel H. Kress Coll.), and the later *Coronation of the Virgin* in the Museo di S. Marco (an altarpiece sometimes attributed to Strozzi, who, on the other hand, did paint the Gardner Altarpiece and perhaps had a hand in the S. Maria Nuova *Coronation* and the *Last Judgment* in the Museo di S. Marco. In the predella of the Louvre *Coronation* another assistant (Domenico Veneziano, according to Pope-Hennessy) is discernible; the similar composition in the predella of the Cortona triptych comes from yet another hand. This last (according to Longhi and Salmi) shows some affinity with Andrea di Giusto's *Miracle of SS. Cosmas and Damian* (Spencer Churchill Coll.; part of a serial predella but not at all similar to the other six panels in the Mus. di S. Marco, generally attributed to Strozzi and thought to belong to the Annalena altarpiece). But the Spencer Churchill picture can be more closely connected with certain frescoes in the monastery of S. Marco (Pope-Hennessy calls the painter of these the "Master of Cell 2"), just as the so-called "Master of Cell 32" looks very like the creator of the *Christ on the Cross with the Virgin and Eight Saints* (Met. Mus., New York). Finally, in the predella of the Montecarlo *Annunciation* and other minor works, Salmi has detected the hand of Battista di Biagio Sanguigni.

Critics have sought to solve the problems of chronology and interpretation by looking for collaborators in almost all Angelico's major works. The above works, although very close indeed to those of Angelico, are all pictures in which it is possible to define, objectively and with some confidence, the painters' personalities.

The frescoes for the monastery of S. Marco were probably started in 1438-39 and must have been finished by the time Angelico left for Rome (1446-47); but it is possible that certain parts were completed by pupils after this date. We cannot establish the chronology of the entire cycle with any finality, although there is a certain stylistic sequence between the Cortona triptych, the Annalena altarpiece, and the great *Christ on the Cross* (chapter room, S. Domenico, Fiesole) which might lead one to select the latter as the starting point in the gradual process of simplification of form culminating in some of the frescoes within the cells (but Salmi maintains that it was painted before the frescoes in the S. Antonino cloisters, citing the date of the construction of the chapter room as 1441-42; cf. *Catalogue*, Angelico Exhibition, p. 99). The cell frescoes whose authenticity is definite, listed by location, are:

East wing: Cell 1, *Noli Me Tangere*; 3, *The Annunciation*; 6, *The Transfiguration* (PL. 266); 7, *The Mocking of Christ*;

9, *The Coronation of the Virgin*; 10, *The Presentation in the Temple*.

North wing: Cell 39, *The Adoration of the Magi* (which has stylistic resemblances to the S. Domenico *Christ on the Cross*; indications of its date may also be had from the Oriental aspect of some of the costumes — seen perhaps at the Council of Florence in 1439 — and from the fact that in 1443 Pope Eugenius IV spent Epiphany in this cell on the occasion of the consecration of S. Marco; Gengaro's attribution to Gozzoli is endorsed by Pope-Hennessy for the right-hand half of the picture only). Also by Angelico are the *Virgin and Child with Saints* (PL. 272) in the east corridor, and the *Annunciation* in the north corridor.

The frescoes in the other cells are to a greater or lesser degree the work of pupils, among whom it is possible to distinguish the "Master of Cell 2" (Pope-Hennessy), who may have painted, besides the *Deposition* in this cell, the frescoes in Cells 4, 5, 8, 11, and 15 through 23 (Salmi suggests rather the assistance of Strozzi in Cells 5 and 8 and relates them to the first phase of the whole cycle of frescoes; he also classes Cells 15 through 22, 26, and 27 together as the work of another pupil and tentatively identifies the painter of the *Christ Carrying the Cross* in Cell 28 with Benedetto Bonfigli; Bazin groups most of them under the heading "Master of the Nativity").

To the "Master of Cell 31" (Pope Hennessy) are given, besides the *Christ in Limbo* in this cell, the frescoes in Cells 32 through 35. This group is ascribed by d'Ancona, Van Marle, Schottmüller, and Salmi to Strozzi; Salmi discerns in Cell 34, the *Agony in the Garden*, the assistance of Gozzoli, which he sees also in Cell 36 and in the *Pietà* of Cell 38; A. Venturi considers Cell 38 as an early work of Gozzoli; Pope-Hennessy, on the other hand, considers Cell 36 to be the work of yet another master (the "Master of Cell 36") to whom he also gives Cells 37, 42, and 43.

Usually ascribed to Angelico are the frescoes in the cloister of S. Antonino, consisting of *Christ on the Cross Adored by St. Dominic*, *St. Peter Martyr Enjoining Silence*, *St. Thomas Aquinas, Pietà*, and *Christ as a Pilgrim Received by Two Dominicans* (in the lunettes over the doors leading into the cloister).

To the long period which Angelico must have devoted to the S. Marco frescoes only a few easel pictures can be assigned, and, with regard to time and style, these cannot with any certainty be related to the frescoes. The *Virgin and Child* in the Uffizi, Florence, which comes from the Prepositura di S. Michele Arcangelo at Pontassieve, seems to be allied to the S. Marco *Madonna* and may hence be dated about 1440. In this period, too, critics usually place the *Madonna and Child* ("Madonna of the Lily," Rijksmus., Amsterdam) and the *Madonna and Child* in the Pinacoteca Sabauda, Turin (Collobi Ragghianti accepts Pope-Hennessy's dating of 1450 but questions the authenticity of the picture), although Salmi places the first of these two before the Cortona triptych. To the final period — just before Angelico's visit to Rome — may be assigned the *Last Judgment* of the National Gallery in Rome (often dated later; for its original connection with the two lateral wings of *The Ascension* and *The Pentecost*, see *Catalogue*, Angelico Exhibition, no. 44, p. 74), the *Christ on the Cross between the Virgin and St. John with a Dominican Cardinal* (Fogg Mus., Cambridge, Mass.; for the identification of this Dominican prelate and the consequent *terminus post quem* of 1439, see Orlandi, p. 174), the *Madonna and Child with Five Angels* (Von Thyssen Coll., Lugano) painted with the collaboration of a pupil (Pope-Hennessy dates it ca. 1445-50, but Berti considers it to be of the same period as the Annalena altarpiece; see *Catalogue*, Angelico Exhibition, p. 84).

The frescoes in the Chapel of Nicholas V in the Vatican (PL. 270) represent the high point of Angelico's quest, the achievement of color that unites all the techniques of form and perspective, and not, as is so often alleged, an effort to reconcile the "monastic manner" with the more "modern" tastes of the Humanist Pope.

The upper tier consists of scenes from the life of St. Stephen, presenting the following double scenes in three lunettes: *The Ordination of St. Stephen* and *St. Stephen Distributing*

Alms; St. Stephen Preaching and St. Stephen Addressing the Council; and The Expulsion of St. Stephen and The Stoning of St. Stephen. In the lower tier are three single scenes from the life of St. Lawrence and one double one: *The Ordination of St. Lawrence; St. Lawrence Receiving the Treasures of the Church; St. Lawrence Distributing Alms; and St. Lawrence before Decius and The Martyrdom of St. Lawrence.*

On the corner pilasters of the chapel, Angelico has portrayed eight Church Fathers and, in the vault, the four Evangelists (for the chronological sequence of the frescoes and for all Angelico's work during his first stay in Rome, see Pope-Hennessy, pp. 187-98). We have evidence that Angelico had the following pupils from 1447 onward: Pietro di Giacomo da Forlì, Giovanni d'Antonio della Cecca, Giacomo d'Antonio da Poli, Carlo di ser Lazzaro da Narni, and Benozzo Gozzoli (see E. Müntz, pp. 126-27). Their assistance, especially Gozzoli's, is usually considered to predominate in the *Scenes from the Life of St. Stephen* (Van Marle even attributes three of them to an anonymous collaborator; Muratoff denies Angelico any hand in them; for Gozzoli's share, see G. Pacchioni, pp. 423-42); but it is perceptible in only a few parts of the *Scenes from the Life of St. Lawrence*.

The vault of the Chapel of the Corporal (Cappella della Madonna di S. Brizio) in the Cathedral at Orvieto (*Christ in Majesty with Angels, and Sixteen Prophets*) was almost entirely painted by pupils; nevertheless we may accept as Angelico's the figure of Christ and the upper row of prophets in the vault to the right (the decoration was executed in the summer months of 1447; see relevant documents in Pope-Hennessy, pp. 189-90; Salmi attributes to Gozzoli the angels in the vault to the left of Christ and to Giacomo da Poli and Giovanni d'Antonio the heads in the decorative frieze).

Related to the period (ca. 1450) after Angelico's first visit to Rome are the panels for the silver chest once in the Church of SS. Annunziata and now in the Museo di S. Marco (scenes from the lives of Christ and the Virgin, preceded by *The Vision of Ezekiel* and concluded by *The Creed and Sacraments*). Salmi and Collobi Ragghianti maintain that much less is the work of pupils than is generally believed; except for the work of Baldovinetti, who did the three scenes of *The Marriage at Cana, The Baptism of Christ, and The Transfiguration*, no collaboration can be identified, except in some of the scenes following *The Flagellation* and in the *Vision of Ezekiel* itself (for Benozzo Gozzoli, Zanobi Strozzi, and the arrangement of the various panels and their original structure, see Baldini, 1956, pp. 83-5).

The Bosco ai Frati Altarpiece (Mus. di S. Marco), painted for the Franciscan convent of S. Bonaventura, could not have been painted before 1450, when St. Bernardino was canonized. The latter appears in a predella (Mus. di S. Marco) of a Pietà with SS. Peter, Paul, and three other saints, which is also known to have come from Bosco ai Frati; so one may legitimately suppose it to belong to the altarpiece. Although generally accepted as by Angelico, the altarpiece seems to show the hand of a pupil, whom Bazin identifies with Gozzoli; from a very similar brush come *The Redeemer* in the Museo di S. Matteo, Pisa, the *St. Francis* (Johnson Coll., Philadelphia Mus. of Art), and a fragment of *The Crucifixion* in the Church of S. Niccolò del Ceppo in Florence (cf. *Catalogue*, Angelico Exhibition, p. 34).

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Illustrations. P. 5 260-273.

ANGKOR WAT. See CAMBODIA; KHMER ART.

ANGLO-SAXON and IRISH ART. The term "Irish art" denotes a special system of decoration and of abstract ornament that survives chiefly in manuscripts, metalwork, and sculpture in the British Isles from the 7th to the 10th centuries, persisting much later in Ireland itself. A discussion of its origins follows, but in treating of Anglo-Saxon and Irish art as a development of the decorative styles of early medieval Europe (see EUROPE, BARBARIAN), the term "Hiberno-Saxon" will be adopted here.

SUMMARY. Critical premise (col. 446). Origins of Hiberno-Saxon art (col. 447). Irish contribution to Hiberno-Saxon art (col. 448). Ornamental motifs and system of decoration (col. 450). Hiberno-Saxon illumination (col. 451). Sculpture (col. 454). Hiberno-Saxon art of the 8th and 9th centuries (col. 455). Architecture (col. 459).

CRITICAL PREMISE "Irish art" constitutes a most influential and important chapter in the history of medieval art. As a result of the Viking raids and invasions of the British Isles of the late 8th-10th centuries, innumerable pieces of insular metalwork found their way back to Norway and Denmark and exercised a profound influence on the development of barbaric art in Scandinavia (PL. 287). The Irish and Anglo-Saxon missionary foundations on the Continental mainland gave rise to art schools under strong Anglo-Saxon and Irish influence (PL. 287). Through them, in particular, the insular tradition — its interlaces, elaborate initials, and embellishment of text and borders of the page — entered Carolingian art (q.v.) and became an integral element in the development of Romanesque style (q.v.). Traditionally this art has always been supposed purely Irish. Serious counterarguments were first put forward in 1934 by Clapham. "We must conclude," he ended, "that Hiberno-Saxon art was in no sense Irish; but that the Irish perhaps welded its component parts into one style; that this welding probably took place in Northumbria in the second half of the 7th century and that it was transmitted thence to Ireland and from there to half Europe." More recently Massai has devoted a book to the subject, arguing that "Irish" art is entirely Anglo-Saxon. Of admittedly Irish works he says, "Irish illumination reveals to us a profound barbarism, trying to imitate as well as possible, more civilized neighbours."

Both cases can still be strongly argued; but one may venture the opinion that while the Irish made an important contribution to the genesis and practice of this art, the Saxons made one equally important, that the cradle of this art was certainly Northumbria, that it matured there after the official retreat of the Irish mission from Northumbria (A.D. 664), and that the proper designation for it is Hiberno-Saxon art.

ORIGINS OF HIBERNO-SAXON ART. The 7th century is one of the great centuries of British history. Its astonishing cultural and artistic development can be understood only against the historical background, and, where art is concerned, in the light of earlier archaeology of the Celts and of the pagan Anglo-Saxons. From about 450, pagan Germanic people — Angles, Saxons, Jutes, Frisians — invaded and settled in the south and east of the former Roman Province of Britain. In 635 an Irish Christian mission came to Northumberland from the island of Iona (off the west coast of Scotland), at the invitation of the Anglian king, and founded a monastery on the island of Lindisfarne, hard by the royal seat at Bamburgh on the northeast coast of England. The activities and foundations of the Irish spread in the north and midland areas of Britain. Earlier, in the south of England a Roman mission under St. Augustine, sent by Pope Gregory the Great, had arrived in Kent in 597 and begun the conversion of the Anglo-Saxons. The two movements clashed in 664 at the Synod of Whitby over the question of the calculation of the date of Easter and other matters. The Irish party was defeated and withdrew from Lindisfarne to Iona. Irish influences and individual Irishmen remained in Northumbria but were no longer dominant. The Anglo-Saxon church was reorganized from 669 onward by some remarkable men: Archbishop Theodore of Tarsus, a Greek from Cilicia and one-time student at the University of Athens; Hadrian, of North African origin, a notable scholar in Greek and Latin, former Abbot of the monastery at Lucullanum near Naples; and the Saxon nobleman Benedict Biscop, who made seven journeys to Rome. With them Mediterranean learning, books, and objects of Mediterranean Christian art flowed into southern England, and after Biscop's founding of the monasteries of Wearmouth (674) and Jarrow, home of the Venerable Bede (685) in the north, into Northumbria and the former territories of the Irish Mission.

During and after the generations of Anglo-Saxon settlement the subject population in the occupied areas and the inhabitants of Wales and Scotland, which were never occupied, remained Celtic. Celtic kings of the north and west retained considerable power into the 7th century and later. It is entirely plausible that the Celtic element encountered in Hiberno-Saxon art derives from the Celtic native population that underlay or existed alongside the area of the Saxon conquest. There is no need to assume that they must all derive from Ireland (see **CELTIC ART**).

The bronze mirror from Birdlip in Gloucestershire (PL. 289) and the bronze shield (PL. 289) from the River Thames at London (Battersea), both dating from the first half of the 1st century of the Christian era, illustrate the general character of Celtic art in the British Isles, including Ireland, in prehistoric times. They show a dynamic system of curvilinear ornament. Nuclei are formed by bosses or curls, and from these run out long, linking curves, scrolls, and spirals. The ornament on the mirror back is in a flat linear version. The mirror handle and the shield show a plastic form on which the bosses and main lines of the pattern stand out in sharp relief. Polychromy is introduced by the presence of studs or flat fillings of red enamel. On the Battersea Shield the enameled studs carry thin swastika-like metal grills pressed into the convex surface of the stud. This technical device was still being used in the Christian period six or seven hundred years later. Two details (PL. 289) recur constantly in the Christian period — the "pelta" shapes, like a bowed shield with curled-back ends seen in profile, which occur in high relief above the mirror handle and facing inward on either side of the shield boss; and the common feature (seen on the "pelta" of the mirror) of small lentoid or pointed-oval shapes inserted like lips across the maximum expansions of the molding.

We must now look at Hiberno-Saxon art of the pagan period (5th–7th centuries) and at Irish art of the 6th and 7th centuries. What were these arts like, and what elements did each contribute to the Hiberno-Saxon flowering?

The mere bulk of Anglo-Saxon applied art of the pagan period is very great; in the second quarter of the 7th century, as the record of the pagan grave goods fades out with the gradual

acceptance of more Christian burial customs, this art shows all the fertility, variety, and brilliant technical accomplishment that characterizes the later manuscript art. The royal ship burial excavated in 1939 at Sutton Hoo, on the coast of East Anglia, is the perfect illustration of this. The burial took place in A.D. 654 or 655, the objects in the grave being variously manufactured somewhat earlier. On the great gold buckle (PL. 288) is accomplished interlace, light and mobile on the buckle loop, slower and thicker on the plate. It is "zoomorphic," or animal, interlace and has a dotting of niello spots. In the central area of the buckle plate the design (two interwoven snakes) is asymmetrical, yet the whole is in equilibrium. The gilt-bronze mounts from Caenby and Faversham (PLs. 288, 289) are examples of plain (nonzoomorphic) interlace, and the gold rectangular cloisonné mount with garnet inlays from Sutton Hoo shows twisted cable-pattern borders defining small rectangular fields. The lid of the Sutton Hoo purse, probably ivory, with gold outer frame and countersunk plaques (PL. 286), and the shoulder clasp (PL. 286), apart from their technical virtuosity, show Saxon goldsmiths at this time (ca. 640) practicing enameling, a technique otherwise found only in Celtic contexts, and here for the first time seen to have been absorbed into the Saxon artistic repertoire at the highest social level. It is a striking example of the fusion of living Celtic and Saxon traditions well before the appearance of the first Hiberno-Saxon manuscript, the Book of Durrow.

These and other objects (PL. 284), in their allover surface spreads of garnet encrustation and of pattern, in their precision, perfection, ingenuity, and freshness of ideas, and in their feeling for symmetry and paneled design, illustrate the characteristics of the early Hiberno-Saxon book decoration seen in the books of Durrow and Lindisfarne (PLs. 280, 284; FIG. 449). The animal ornament of this Saxon background is clearly the source of that in the Book of Durrow. Furthermore, the design of the carpet page (fol. iv) of the Book of Durrow (PL. 284) has a clear relationship, in its step-pattern design with "millefiori" inclusions and its rectangular cloisonné-inspired field within an interlacing border, to the panels of the Sutton Hoo clasps (PL. 286; FIG. 451).

The 16 pieces of imported eastern-Mediterranean silver in the Sutton Hoo burial, including a great salver with stamps of the Byzantine Emperor Anastasius I; the "Coptic" bowls (of Alexandrian origin) frequently found in Saxon graves of this period; the mere profusion of garnets (of Indian origin) in Anglo-Saxon jewelry — all help to demonstrate that the Anglo-Saxons in the first half of the 7th century were in regular contact by trade with the eastern Mediterranean. The influx of Mediterranean paintings, textiles, books, and gifts more specifically Christian in character began with St. Augustine's mission of 597.

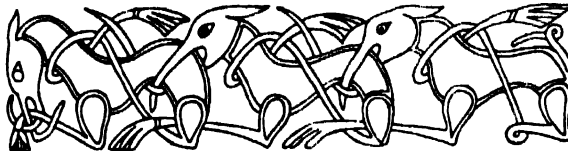
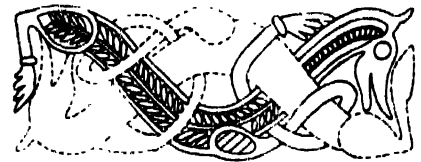
Two scenes in bronze *repoussé* sheeting (PL. 288) from the Sutton Hoo helmet (of Swedish manufacture) and the scenes of the man between beasts and two birds on the Sutton Hoo purse, reveal the existence of an original vernacular style of naturalistic, narrative character, a representational art in aristocratic circles, alongside the wealth of ornament. The gold ring from the Snape ship burial (PL. 288) of about A.D. 630 again illustrates the skill of the Saxon jewelers and their interest in the classical background: it is constructed around a classical moss-agate intaglio with a figure of Bonus Eventus. There are many other evidences of a lively interest among the Saxons in the material remains of Roman Britain (see below, under *Architecture*).

IRISH CONTRIBUTION TO HIBERNO-SAXON ART. In Ireland there is by comparison very little to show. It must not be overlooked that the Sutton Hoo treasure comes from a grave, as have all the Anglo-Saxon objects just discussed. The apparent sterility of the Irish background must be to some extent illusory and due to the fact that the Irish of this time, being Christians, did not bury objects in their graves. But even so, Irish peat bogs and habitations and early monastic sites have singularly failed to produce anything to match the quality or variety that existed in the Anglo-Saxon background.

Expert metalwork was certainly practiced in Ireland. The "Petrie Crown" (PL. 289) is purely Celtic and shows the sur-

vival of unadulterated Celtic art into a period which is perhaps 6th or 7th century. A class of ornament native to Ireland, the "latchets," or dress-fasteners (PL. 289), shows that a Celtic ornamental style using enamel was in full swing in the workshops of the Irish metalworkers in the 6th and early 7th cen-

not Saxon), then, the quality and vigor of the metalwork background in Ireland and its contribution to the manuscript art is greatly enhanced. But that all, or even any, of the bowls are Irish, and not made in the Celtic areas of north or west Britain, is by no means certain.



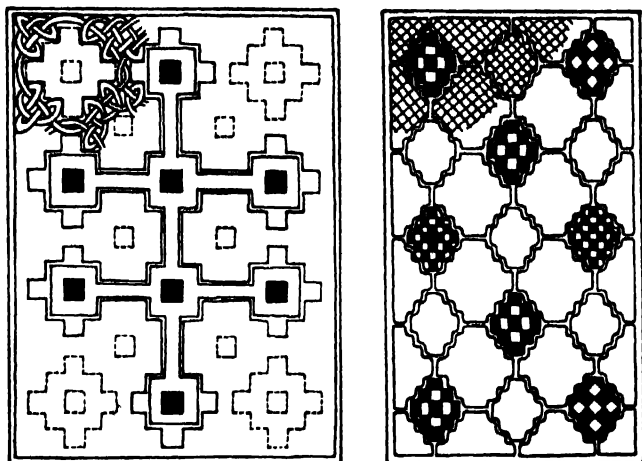
Decorative motifs with animals in pairs or series: comparisons of 6th- and 7th-century jewelry with manuscripts. Left to right and top to bottom: Silver roundel, from Caenby, Lincolnshire; disk brooch, from Faversham, Kent; gold shoulder clasp, from the Sutton Hoo ship burial; round brooch, from Allington Hill, Cambridgeshire; bone drinking horn, from the Sutton Hoo ship burial; sword hilt, from Crundale Down, Kent; Book of Durrow, fol. 192v; Lindisfarne Gospels, fol. 27r (from an unpublished drawing by R. L. S. Bruce-Mitford).

tures. The evidence derived from the excavations at Garraun in County Cork for the actual manufacture of "millefiori" enamels in 6th-century Ireland is not conclusive. Rods of millefiori were found in a workshop, but this is the natural form in which millefiori as raw material might be expected to be traded from a center of manufacture.

The "hanging bowls" are of crucial importance in the attempt to assess the Irish contribution to Hiberno-Saxon art. Remains of over 130 are known, of which some two-thirds belong to the 5th-7th centuries. They are deep basins of thin bronze and usually have five applied bronze disks ("escutcheons"): three at the rim with hooks attached to form the points of suspension; one inside the bowl at the center; and one underneath the base in the corresponding position. The escutcheons (PL. 289) are brilliantly ornamented, usually with Celtic curvilinear designs reserved in the bronze and coated with white tin, against a ground of red champlevé enamel (see ENAMELS). The earliest bowls show a sub-Roman phase; there is a series with decoration in a simple "ultimate la Tène" style, equivalent to that seen in manuscripts of the Cathach of St. Columba (PL. 284). Finally there are those which show a kind of rejuvenated ornament of dynamic spirals throwing off swelling arcs which are interrupted at their widest expansion by pointed, leaf-shaped transverse inclusions, giving the impression of trumpet mouths (PL. 289). This phase in the metalwork shows designs exactly equivalent to the trumpet-spiral page of the Book of Durrow. In the Faversham bird-shaped escutcheon and the Dublin latchet (PL. 289), the fine "hair-spring" coil is not associated with the tight spirals, the trumpet pattern, and the "pelta" theme. The bowls are also (except for the Sutton Hoo jewelry) the sole repositories of millefiori enameling in the early period, and "millefiori" themes play an important part in the Book of Durrow. If these hanging bowls are all, as F. Henry believes, of Irish manufacture (they are, of course, purely Celtic and

ORNAMENTAL MOTIFS AND SYSTEM OF DECORATION. This art is characterized by distinctive groups of ornamental ideas. First, and in some ways the most influential, since they are dynamic, are curvilinear motifs — spirals, scrolls, swelling curves, "trumpet-pattern," and triakelion motifs, often combined in tightly knit, vital areas of ornament. This group is essentially Celtic and derives ultimately from the Celtic art of the British Isles in late prehistoric and Roman times. Second, there is a characteristic range of geometrical devices, including key-pattern, the "diagonal fret," and various "step-pattern" themes, derived from cloisonné metalwork. Also found in metalwork and the earliest manuscripts are small-scale, polychrome "millefiori" patterns (see GLASS), either in enamel on metal or in painted versions of the metalwork patterns. "Millefiori" patterns do not figure in the later manuscripts, but they are a prominent feature of the critical document, the Book of Durrow, and are important for the question of origins of the style and of the relationship between the first manuscripts and the metalwork that preceded them. Third is the profuse employment of interlace, sometimes broad and slow, sometimes minute or thin and lively. Fourth of the groups of motifs is a characteristic fauna, a whole system of ornament composed of animals and birds, often with elongated bodies or limbs, closely interwoven in a tight spread of continuous ornament, animated by heads, clawed feet, and the thin interlacing lines of infinitely prolonged tongues, tails, or ears. Fifth are human figures of doll-like simplicity or treated in an abstract, schematic manner.

In manuscript decoration "Irish art" conveys also a special system of applying decoration to the codex. In the case of the Gospels the whole grammar of abstract ornament just described is employed to embellish the sacred text. A page resembling a carpet devoted entirely to abstract ornament is inserted at the beginning of each Gospel. Opposite this, the opening lines of the text itself are greatly elaborated, both in



Geometric motifs. Left: Book of Durrow, fol. 4v; right: shoulder clasp from the Sutton Hoo ship burial (after Hodgin).

the forms of initial letters or monograms built from them and in the extension of decoration into the marginal spaces and to subsequent words, which are often set out in rows of ornamental capitals.

The decorative accent falls heavily at the beginning of each Gospel, but in addition the words of St. Matthew that introduce the story of the Nativity, "Christi autem generatio sic erat," are elaborated on the basis of a Chi-Rho monogram (PLS. 275, 281); and colored initials mark the beginnings of the Eusebian sections or of prefaces. Pages on which the Evangelists' symbols are depicted, individually, or grouped between the arms of a cross, or both, are introduced (PLS. 274, 283).

Another tradition includes portraits of the Evangelists, accompanied by their symbols (PL. 282).

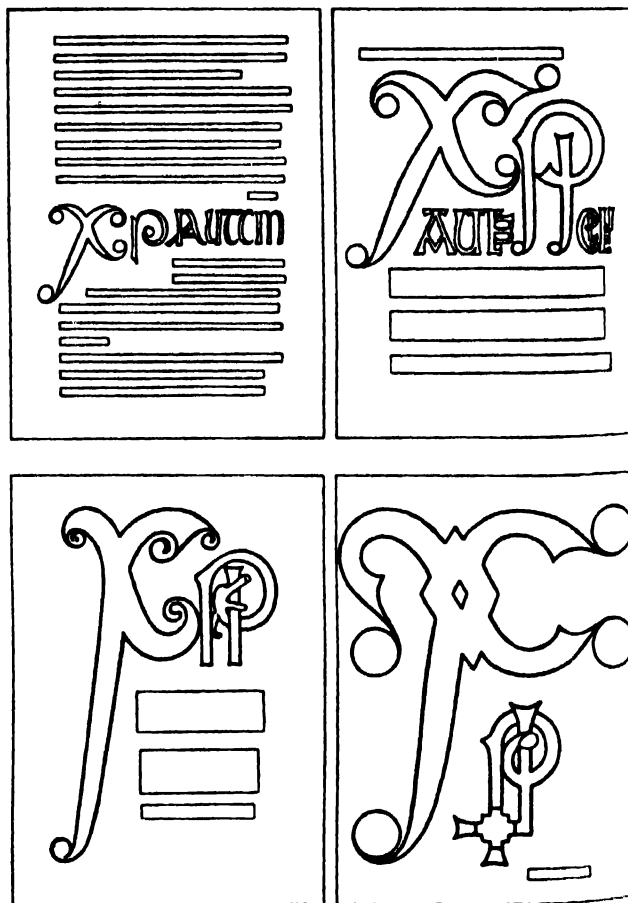
The whole makes a highly characteristic system of book decoration that is in no sense illustrative, but enriching and ornamental, although in late examples such as the Book of Kells illustrative scenes (the Temptation, the Arrest of Christ) may be absorbed from Carolingian sources.

HIBERNO-SAXON ILLUMINATION. Until recently it was supposed that the first true monument of "Irish" art, in which the various distinctive themes are first combined and applied to a codex in a recognizable system that later became standard practice, was the Book of Durrow. This manuscript of the gospels is certainly appreciably earlier than the Lindisfarne Gospels (PLS. 280, 282). It is in many ways more archaic, less evolved; it sets out to be a rich and elaborate manuscript, yet it has far fewer themes and fewer colors than the Lindisfarne Gospels, and in it the different elements (trumpet spirals, cloisonné themes, animals) are still isolated from each other on separate pages, not inextricably intermixed on the same page as they later become. The bird and the dog, soon to be universal (PL. 280), have not yet been introduced. Its text, palaeographically Northumbrian, shows the influence of St. Jerome's Vulgate version, which may be assumed to have reached Northumbria in 674, when the monastery at Monkwearmouth was founded and the influx of Mediterranean codices into the north began. It probably dates from about A.D. 680. It shows us Hiberno-Saxon art full blown but in a pristine state. So long as this was thought to be the first document of Hiberno-Saxon book decoration, its sources could be sought only in archaeological materials, chiefly metalwork. But certain early 7th-century manuscripts, Irish or Irish-influenced, in the Ambrosian Library, Milan, formerly belonging to the Irish foundation of Bobbio, are now recognized as revealing the earlier stages in the development of this system of book decoration — particularly D.23 Sup. and S.45 Sup. (PL. 284), and especially a manuscript in Dublin known as the "Cathach" of St. Columba, which may well date from the end of the 6th century (PL. 284), and

the Gospel fragment A. II. 10 at Durham (PL. 284) of about A.D. 650.

The Cathach of St. Columba shows two important things: In a purely Irish manuscript dating before the Irish mission to Northumbria, we see the application to ornamental initials of the Celtic "ultimate la Tène" style of the lachets and the earliest penannular brooches and hanging bowls. Also we see around letters red peripheral dots (destined to a vast ornamental development) and, in particular, two elements vital for the future — a flexible, elastic type of initial with split stems providing empty interior fields (PL. 284); and a system by which the opening letters grade down progressively in size to merge gradually into the ordinary text hand. This system is something quite different from the antique initial standing rigidly detached at the beginning of the line, followed abruptly by the normal small text hand, and it develops directly from Irish beginnings. Henry claims that the decorative opening at the beginning of Ambrosian D. 23 Sup. — a page of pure ornament on the left, with an elaborate beginning of the text on the right and the long *hasta* of the P running down the margin and turning out into it at the bottom (FIG. 452) — foreshadows the tremendous carpet-page and monogram openings of the later Hiberno-Saxon Gospel books and shows this also to have been an Irish contribution. Again, comparison of the initial NI of the early 7th-century Bobbio manuscript, Ambrosian S. 45 Sup., with those of the later Durham A. II. 10 (PL. 284), the Book of Durrow, and Durham A. II. 17, shows clearly the Irish genesis of this type of initial or initial-monogram.

The Durham Gospels fragment A. II. 10 (PL. 284) goes a stage further. It was no doubt written in Northumbria within the period of Irish domination (i.e., before the Synod of Whitby, A.D. 664); it shows a genuinely painted manuscript, with the



Evolution of the Chi-Rho monogram in early Hiberno-Saxon manuscripts. Left to right and top to bottom: Book of Durrow; Lindisfarne Gospels; St. Gall Codex (Ms. 51); Book of Kells (after Kendrick).

palette and pigmentation of Durrow; it obviously sets out to be a richly decorated Gospel book on a large scale. Yet its repertoire is little more than spotted interlace and vestiges of "ultimate la Tène" style, weak spirals, panels diversely colored, and some zoomorphic touches. It advances the tendencies of the Cathach of St. Columba a step. But the end of St. Matthew and the opening of St. Mark survive, and from these it is clear that the true Hiberno-Saxon system has not yet been begun. There are no carpet pages, no Evangelist-symbol or portrait pages; instead, the embellishment is devoted to the colophon in the antique manner. Furthermore, the manuscript shows no trace of the trumpet-pattern Celtic ornament seen fully developed in the Book of Durrow (PLS. 283, 284). It may well be that these elements and the full decorative system as applied to the codex are additions or developments that took place in Northumbria itself, with a very considerable admixture of Anglo-Saxon ideas, skill, and initiative, after the departure of the Irish in 664.

The case for the Irish origin of the Book of Durrow (and so of the insular Gospel-book type and insular manuscript embellishment in general) has come to rest largely on two stone monuments, both in Ireland, the Fahan Mura slab (PL. 290) and the Cardonagh cross. The Fahan Mura slab shows a broad interlace with contour lines at either side and (on the face not illustrated) two birds at the top, affronted. Two doll-like human figures stand facing inward on either side of the cross stem. The Cardonagh cross and two pillars associated with it again show broad interlace, some pointed knots, pellets, birds, and curiously primitive human figures. Henry dates these crosses in the second half of the 7th century. If they and the pillars are indeed contemporary with the Book of Durrow or earlier, they present between them a different, richer picture of Irish art at this time; in particular, the Cardonagh cross and pillars show quite an elaborate iconography of figure subjects. However, in the latter part of the 7th century Ireland was being subjected to the full flood of influences traveling in the reverse direction, from Northumbria.

To summarize, it seems clear that the dynamic initial, the integration of initial and text, the introduction into manuscript decoration of a Celtic "ultimate la Tène" style and of the basic elastic initial forms with split stems, giving fields for interior ornament, are a purely Irish contribution and a decisive influence in the development of Hiberno-Saxon book decoration. The source of other elements, including the introduction of Evangelist portraits and symbols, animal and bird ornament, interlace, themes based on cloisonné jewelry, millefiori patterns, trumpet-pattern designs, the carpet pages that contain them, and the full decorative pattern of the codex remains uncertain but, no doubt, was largely Saxon.

The Lindisfarne Gospels (PL. 280) is at the summit of Hiberno-Saxon book decoration. It was written and illuminated probably in A.D. 697-98. It follows closely the pattern of the Book of Durrow but introduces new elements: The bird and the dog replace the mythical quadruped; new types of interlace — more minute, intricate, or delicate — appear; there are new pigments (blue, purple) and an astonishing virtuosity in their mixture and application. As against only three colors used in Durrow (green, red, and yellow), 45 distinct tones or shades can be distinguished in Lindisfarne. Carpet pages and initials, and the decorated text pages opposite the carpet pages, become much more elaborate and attain an incredible perfection of execution. Yet (like Durrow) Lindisfarne obeys strict laws of symmetry in composition and a rigid general control over the flights of fancy in detail. With Lindisfarne appear a set of genuine "author portraits" (PL. 282) closely based on 6th-century Italo-Greek medals. They show a northern transformation of the antique, painterly modeled style into a sharp, clear, flat shape and linear patterns. Yet they adhere carefully to antique iconographic detail and remain imposing human beings, not abstract patterns or symbols. The Lindisfarne Gospels also sees the first appearance in Western book decoration of canon tables arranged under columns and arches, in a 16-page series. The execution of all the ornament is meticulous and infinitely painstaking. At Lindisfarne itself there are other examples of

Romanizing art to set beside the Evangelist portraits of the Gospels: St. Cuthbert's coffin, made in A.D. 698, shows a figural art based directly on Mediterranean models and a total absence of Hiberno-Saxon ornament. The silver casing, probably also made in 698, of his portable altar bears a naturalistic composition of St. Peter. The Codex Amiatinus, produced about the same time at Jarrow, shows in an extreme form the "Italo-Mediterranean" element in Northumbrian art of the late 7th century. The portrait of Ezra (PL. 282) is native Anglo-Saxon work; yet it reproduces with complete faithfulness the 6th-century model (a miniature in the Codex Grandior of Cassiodorus, which Abbot Ceolfrith brought to Jarrow from Rome). Even the antique technique of painting is painstakingly followed, with modeling and highlights, extensive use of gold for background and details, and pigments different from those used in the Hiberno-Saxon manuscripts.

The Echternach Gospels (PL. 274) and the Durham Gospels (PL. 284) occupy an intermediate position between the Books of Durrow and Lindisfarne. The Echternach Gospels, associated with the Saxon St. Willibrord's early 8th-century foundation at Echternach in Luxembourg but written in Northumbria (PL. 274), shows the very restricted range of colors seen in the Book of Durrow, but the Evangelist symbols have a new verve and decisiveness and are integrated in an accomplished way with the frame and general design of the page. The Matthew symbol, like that in Durrow, is indeed a symbol, a piece of highly stylized, abstract, anthropomorphic pattern, but the lion of St. Mark has a splendid, heraldic vivacity. The penmanship and technical accomplishment of the Echternach Gospels is of the highest order; but its repertoire of ornament, without the birds and dogs of Lindisfarne, is comparatively simple, and its monograms and big initials have not attained the dimensions of those in Lindisfarne, Chad, and Kells. It was probably written in Northumbria in the 680s. The Durham Gospels, A. II. 17, shows a more elaborated phase and a richer pigmentation. It contains the bird theme and is much closer to the Lindisfarne Gospels.

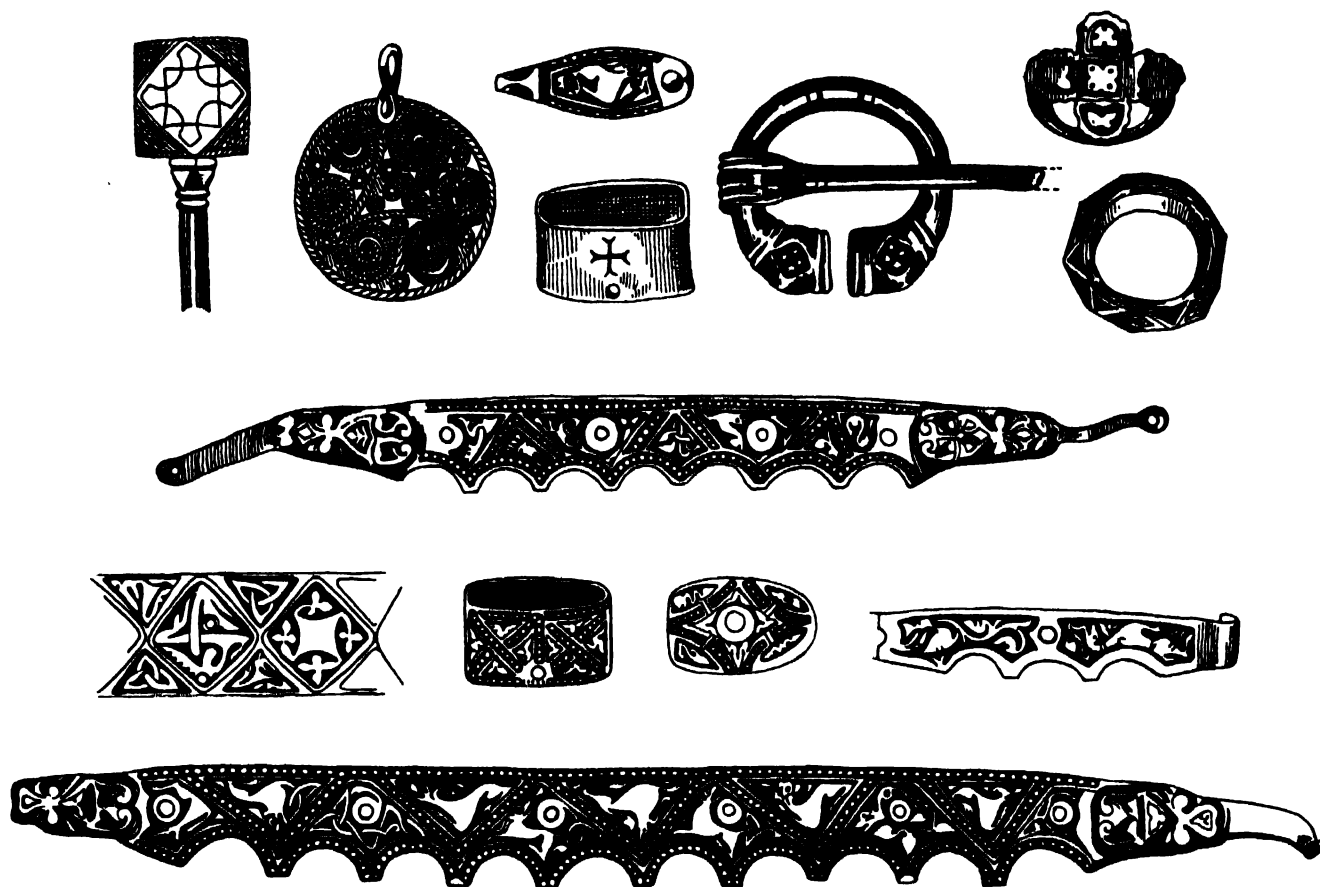
SCULPTURE. An important contribution of the Anglo-Saxons to European art is in the field of sculpture. Fragments of many hundreds of massive stone crosses survive from the British Isles, particularly England, representing a bulk, variety, and quality of pre-Romanesque sculpture unmatched anywhere else in Europe (PLS. 290, 291). The most famous of all the crosses (A.D. 690) stands in the church at Ruthwell, in Dumfriesshire, southwest Scotland (PL. 290). It is a little over 17 feet in height and is ornamented with an ambitious series of figure subjects and with vine scrolls inhabited by birds and animals, all arranged within panels and carved in deep relief. The cross is wholly devoid of interlace, geometric, or curvilinear ornament from the repertory of northern art and is the only cross entirely "Mediterranean" in conception. The figures are plastically conceived and stand in rigid postures, and they and the monument as a whole are of Romanesque dignity and proportions. The iconography includes the symbols of the four Evangelists (at the top of the cross), an eagle and an archer, St. John the Baptist with the Lamb, a Christ-Majesty, St. Paul and St. Anthony, and the flight into Egypt, as well as the imposing scene representing Mary Magdalene wiping the feet of Christ with her hair (PL. 290), the healing of the blind man, the Annunciation, and the Crucifixion.

The Bewcastle (Cumberland) cross (PL. 290) is closely related to the Ruthwell cross but shows an appreciable flattening in the carving and a tendency to reduce the figures and the vine scroll to pattern, making them less naturalistic. We also see in it, as in the Lindisfarne Gospels (PL. 280), the fusion of barbaric ornament with the Mediterranean figure subjects and the new vine-scroll theme lacking in the Lindisfarne Gospels. When compared with the doll-like figures of the Cardonagh cross or the Book of Durrow, these crosses represent a quite new "renaissance" feeling for the human and the monumental. That similar monumental sculpture existed contemporaneously in the south of England is indicated by fragments of a stone cross from Reculver, Kent (PL. 291), almost certainly erected

in 675. The carvings still bear traces of original coloring. The iconographic scheme included a vine scroll incorporating human busts within borders of interlace. The fragment illustrated shows the lower part of a standing figure holding a scroll in the left hand. The treatment of the draperies is singularly fresh. Nothing could be more startling than to contrast this fragment with the Cardonagh cross.

The Franks Casket (PL. 287), a whalebone box with runic inscriptions, probably Northumbrian work of about A.D. 700, illustrates again the mixture of pagan and Christian, northern

tranquil and monumental style. It can, however, be said that the 8th century saw a steady elaboration to a baroque phase at its end, illustrated by the Book of Kells (PLS. 281, 283) and the Rome and Leningrad Gospels (PL. 275). Insular influences also reacted strongly on the Continent at this time. Such Saxon monastic foundations as that of St. Willibrord at Echternach in Luxembourg became centers where insular texts were copied and insular style practiced and modified. The Irish foundation of St. Gall in Switzerland was dominated by influences from the Saxon mission. In Bavaria the Tassilo Chalice, A.D. 777



Decorative schemes on metal objects from Trewhiddle, Cornwall (from *British Museum Guide to Anglo-Saxon Antiquities*, 1923).

and southern tendencies characteristic of this period. Side by side are scenes showing the three kings bringing their gifts to the infant Christ and a brutal scene from Germanic legend. The casket also shows the existence of a free and inventive narrative style, present already in the pagan period.

HIBERNO-SAXON ART OF THE 8TH AND 9TH CENTURIES. The turn of the 7th and 8th centuries marks a climax of great significance in insular art. The art history of the 8th and 9th centuries consists largely in the working out of decorative formulas and the mixture of Mediterranean and northern ideas achieved at that time. Sculpture and manuscripts show in endless variety the reactions between the barbaric ornamental concepts and the naturalism and architectural concepts associated with the Mediterranean world and classical revival. It is impossible to trace any steady development. There is no certainty in the dating either of sculpture or manuscripts. Since it is an age of esthetic experiment and fluctuation, it is impossible to establish a valid and universally applicable chronology on style alone. In certain centers, or in the hands of individual artists, the barbaric reaction to classical themes is developed, a tendency to abstract or turn into a pattern such living subjects as the vine scroll or the human form. Against this, there are periods or individual affirmations of humanism, of a feeling for a more

(PL. 287), is a local work of strongly Anglo-Saxon character. The Lindau book cover (PL. 287), again thoroughly insular and Anglo-Saxon in character, was probably made at St. Gall, while the richly decorated Gospels at St. Gall (PL. 282) are examples of Irish books that found their way to Continental foundations. Toward the end of the century the English development reflected a variety of influences from the Carolingian renaissance.

In the 9th century the course of insular art was profoundly affected by the Danish invasions and occupation of the east and north of England, which in the north put an end to the Hiberno-Saxon development and in the south left Wessex, ruled by King Alfred, as the stronghold of humanism and of insular art.

Some leading examples will illustrate the general development outlined above. The Tara Brooch (PL. 289), a very ornate specimen of a normal insular type common in the west and north in the Christian period, is the supreme example of the application of Hiberno-Saxon decoration to a personal ornament. It has studs of blue and red enamel, tiny human heads carved in amethyst, the finest filigree work in gold wire, bands of inset amber, and the full range of Celtic trumpet-pattern and spiral motifs and animal and bird ornament, the back being as profusely decorated as the front. The supercharging of the surface with excrescences — bosses, studs, and deep borders to

the fields — gives plastic feeling, and the numerous projections from the periphery — fish-tailed, biting creatures mostly — give a kind of Gothic irregularity to the outline. Its date must be about 725, close to the Lindisfarne Gospels, but its decoration is a little more evolved in style, perhaps contemporary with the Book of Chad. The finest surviving product of Hiberno-Saxon metalwork is, however, the Ardagh Chalice (PL. 285). Compared with the Tara Brooch it is less crowded, restless, and baroque and shows a quiet fullness of line and a restraint in ornament (which is confined to panels and nuclei) that recall the controlled and systematized style of such manuscripts as the Lindisfarne Gospels and the Durham Cassiodorus. Technically it is a fantastic accomplishment. It may well be of Northumbrian manufacture and of the period of the Echternach Gospels.

The Gospels of St. Chad show the evolved Lindisfarne style of about 750. Evangelist portraits are included (they are absent from the manuscripts of the Durrow-Echternach-Kells tradition), but the Evangelists are (like the Echternach symbol, PL. 274) purely geometric, schematized figures. The geometric treatment of the ears and nostrils, the tiny heads, cleft chins, and stylized features, the foliated scepter and symmetrically patterned draperies of St. Luke all reflect the barbaric instinct for reducing organic forms to pattern and may be contrasted with the softer, rounded, humanistic figures of the Psalter (Cotton, *Vespasian A. I.*, PL. 287) and the Rome Gospels. The surviving cruciform carpet page of the Lichfield (St. Chad's) Gospels (PL. 283) is strikingly similar to the Lindisfarne St. Matthew cruciform page (fol. 26v) but more evolved in style.

The full baroque tendencies of the end of the century are illustrated by the famous Book of Kells in Trinity College, Dublin, perhaps illuminated about A.D. 800 at Iona. It shows a profusion of decoration far exceeding the restricted scheme of Lindisfarne. More initials throughout the text are illuminated, and they are more freely and fantastically treated; new scenes on full pages, such as the Temptation, the Virgin and Child (PL. 283), and the Arrest of Christ, are introduced. There are full-length portraits of Evangelists, a free use of "naturalistic" human and animal figures, even in the pages of Celtic ornament, and the introduction of foliate themes. Because of its fertility of ideas, fantasy, technical skill and vitality, and its overwhelming baroque profusion, the Book of Kells is accepted as the supreme manifestation of the Irish spirit in art and one of the most remarkable volumes in the world.

A more prosaic Northumbrian equivalent, also of about 800, is the Leningrad Gospels.

New elements, however, were creeping into insular art. The 8th century shows them in a singularly pure form, without any admixture of Hiberno-Saxon elements, in a small silver-gilt bowl which is a masterpiece — the Ormside Bowl, in the York Museum. In a gay, vivacious, brilliantly executed *repoussé* style a new naturalistic fauna appears, wholly different from the Hiberno-Saxon beasts of the Lindisfarne period and from the staid, if perky and natural, birds and beasts of the early inhabited vine scrolls. The lions with worried expressions are of Carolingian inspiration. The strange company of fantastic birds and beasts moves among the branches and fruit of a lush set of symmetrical flowering trees. Apart from fantasy and some stylization, there are delicate modeling and a sensitivity which are quite new. Other indications of fresh Continental, and more specifically Carolingian, influence appear in manuscripts associated with south England. Perhaps contemporary with the Gospels of St. Chad in the north, but very different, is the Psalter (Cotton, *Vespasian A. I.*) in the British Museum (PL. 278). Here we see a rich polychromy with much use of gold, modeled draperies and faces, and a classical solidity of figure style far removed from the anthropomorphic patterns of St. Chad. The foliate details in the margins are straight from the antique model, and the beasts and birds in the capitals and bases of the columns of Merovingian derivation. The gold diamonds in the columns (originally overlaid with black-ink patterning) are antique elements also. Yet in the asymmetrical bar at the bottom, with animal terminations and key pattern, in the interlace of the columns, the powerful trumpet pattern

of the arch, and the design and execution of many remarkable initials, Hiberno-Saxon features are vigorously expressed. The whole is an intelligent hybrid of themes and styles, but the novel impact is that conveyed by the solemn yet animated human figures grouped around King David.

The Gospels Royal (I.E.VI.) in the British Museum (PL. 276) is a very large and opulent codex in the Carolingian vein of the beginning of the 9th century. It contains a great purple folio in the Byzantine and Carolingian manner (PL. 276) with blazing spreads of color and much use of gold. The winged ox in the tympanum and the bust in the medallion, against their vivid rolling backgrounds of clouds, are monumental figures. But there are also to be seen, along with the formalized vine scrolls, cell patterns, and interlaces of the canon-table arcades (PL. 279), lively little leonine beasts, and others with foliated or interlacing tails, introducing a new note of delicacy and pretty animation, injecting fresh blood into the somewhat arid formulas of Hiberno-Saxon decoration. At the bases of the columns (PL. 276) are heavy blocks whose patterns reproduce the I-shaped cells of champeve enamels popular in Ireland at the time. For all its features of Carolingian inspiration, it is a thoroughly insular manuscript.

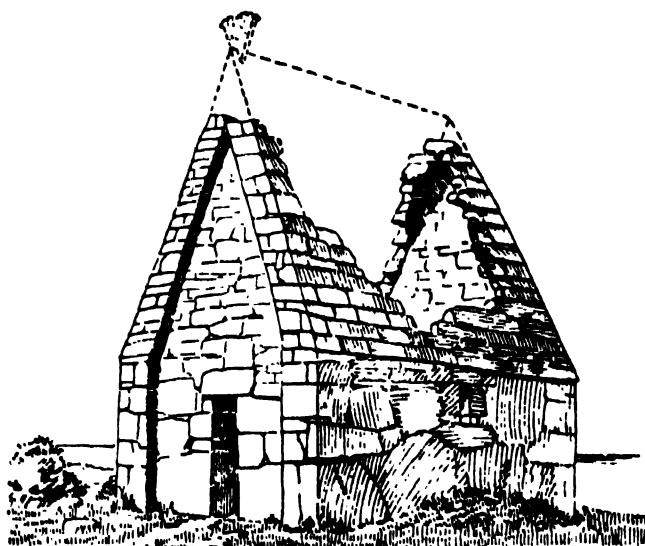
From the 9th century, period of Danish invasions, a considerable number of buried hoards containing metalwork and coins provide a structure of dating evidence for ornamental styles. The hoard of Anglo-Saxon silver found at Trewiddle in Cornwall (British Museum), buried in 875, illustrates this. The fine-scale scraps of interlaces, contorted individual animals in panels with beaded borders, and small foliate details are typical of a whole family of metal objects and of manuscripts and constitute the "Trewiddle style" (FIG. 455). The Kirkoswald (Cumberland) trefoil brooch (ca. A.D. 850) shows the Northumbrian vine scroll in rich filigree wire decoration comparable to that on Carolingian metalwork. Two recently discovered disk brooches in the British Museum further illustrate the importance of decorative metalwork. The Fuller Brooch of silver and niello (PL. 288), dating from about 850, bears the Five Senses in a figure style close to that of the Book of Cerne in Cambridge. The Strickland Brooch (PL. 288), in openwork with inset gold slabs, achieves a rich plastic effect with two zones of little affronted dogs, scraps of foliage, and animal heads with blue glass eyes.

There is a great wealth of 8th- and 9th-century sculpture. The panels and friezes in the churches of Fletton and Breedon on the Hill in Leicestershire include human figures in arcades and an extraordinarily lively and varied series of birds, animals, and geometric themes. The Easby (Yorkshire) cross (Victoria and Albert Mus.) echoes the style of Carolingian ivories and illustrates the newly awakened classical tradition (PL. 291). The shaft from Codford St. Peter, Wiltshire, has been called "purely English in its hard, robust vivacity and its tense abstraction" and represents one of the most spirited and lovely phases of British art claimed to antedate the Norman Conquest of 1066. The carving (PL. 290) has a clear-cut precision and cleanness of outline.

A fragment of a cross from Colerne, also in Wiltshire, belongs to the second half of the 9th century (PL. 291). It shows a flourishing barbaric animal style and illustrates the continuation, side by side with more humanistic tendencies and softer influences of the Carolingian period, of a strong and vigorous barbaric tradition. Carolingian influence is probably also to be seen in the realistic emotional quality of the fine Ascension panel of the Rothbury (Northumberland) cross (PL. 291), devoid of ornamental feeling; but other fragments of the same cross show a hard angularity of form and strong Hiberno-Saxon sense of line and pattern.

The examples of sculpture illustrated give a representative picture of the variety and fluctuation of styles, the richness of iconography, and the high interest of Anglo-Saxon sculpture in this period. In Ireland also sculpture of broad iconographic range in churches and in high crosses was practiced, but in a barbaric and generally uninspired late Hiberno-Saxon vein.

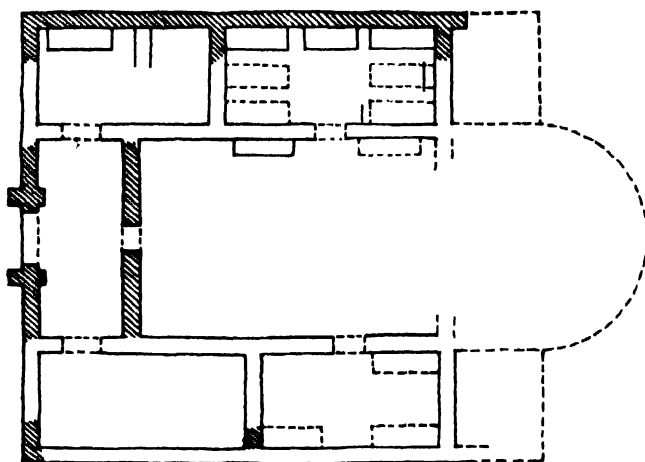
The period of Hiberno-Saxon art ends with the reign of Alfred the Great. The Alfred Jewel (PL. 288), of gold, crystal,



Reconstruction of the Oratory of Illaun Mac Dara, County Galway (from Henry, *Irish Art*, 1940).

and cloisonné enamel, shows a fine level of craftsmanship in small-scale metalwork. But the real importance of Alfred's reign, as is claimed by Sir Thomas Kendrick, is that it witnessed, under Alfred's conscious guidance, a powerful classical revival. The noble, monumental tranquillity of the Deerhurst Angels and the Romanesque feeling of the embroidered figures on St. Cuthbert's stole (PL. 277), woven between 909 and 916 for the Bishop of Winchester, reflect the calm and dignified Romanesque mood, the airy lightness and grace, of Wessex court art at the beginning of the 10th century.

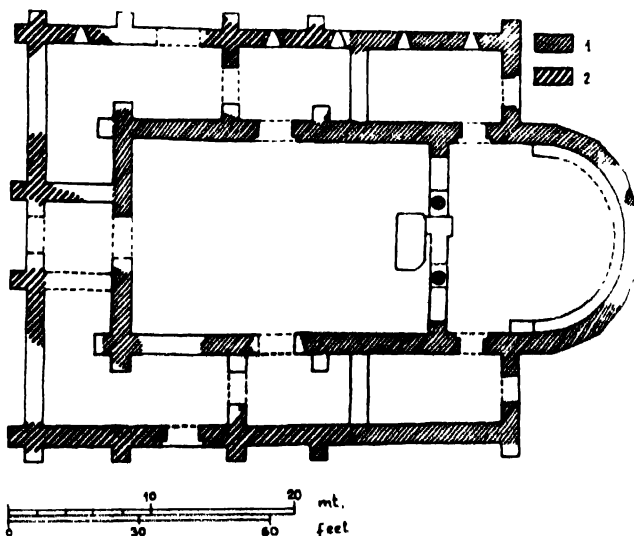
ARCHITECTURE. Irish monasteries and churches of the 6th and 7th centuries were probably built only of timber and sod. The mid-7th-century church at Lindisfarne was entirely of hewn oak covered with reeds. In the west of England and around the coasts of Ireland, where stone is the natural building material, are numerous remains of early monastic sites — clusters of "beehive" cells in dry-stone walling, with corbelled-in roof construction, usually associated with a very small oratory. The monasteries at Skellig Michael, Kerry, on a great



Canterbury, SS. Peter and Paul, ground plan (from Clapham, *English Romanesque Architecture*, 1930).

rock in the Atlantic, and at Tintagel, Cornwall, are the best examples of early stone monastic structures. Lindisfarne in 664 illustrated the frugality of the Irish mission: "There were very few houses, besides the church, found at their departure, indeed no more than were sufficient to make civilized life possible." If the remains of the early choir at Rahan, County Offaly, date to the close of the 8th century, this would illustrate the importation into Ireland of a more elaborate stone architecture, of the kind which had become established in the south of England nearly two centuries earlier. Off either side of the solidly built chancel open two sacristies, prothesis and diaconicon, a common feature in churches of Syria and Asia Minor, necessitated by the liturgical practices of the Eastern Church. Otherwise, the simple, choirless oratory on Illaun Mac Dara, County Galway (FIG. 459), illustrates the best Irish church building of the 8th-9th centuries.

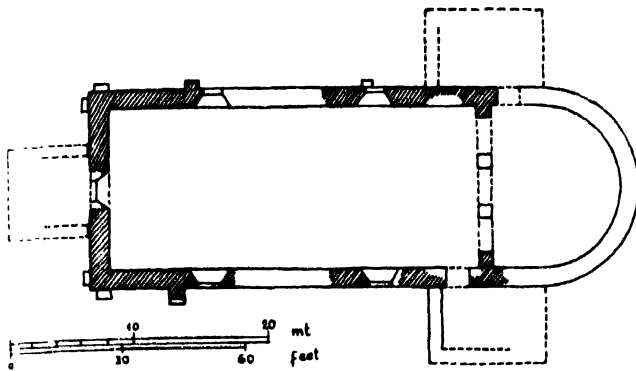
The Anglo-Saxons were competent architects in timber from pagan times; this is shown by the remarkable remains of a series of large aisled halls at Yeavering, not far from Lindisfarne in Northumberland, associated on documentary evidence with the Northumbrian kings of the first half of the 7th century, and by the startling timber contemporary "amphitheater" on the same site, a tall wedge of 16 concentric tiers of seats, a



Church at Reculver, Kent, ground plan. Key: (1) 6th-century walls, (2) walls dating probably from the 8th century (from Clapham, *English Romanesque Architecture*, 1930).

version in timber of an *insula* from a Roman amphitheater. These structures were excavated in 1956.

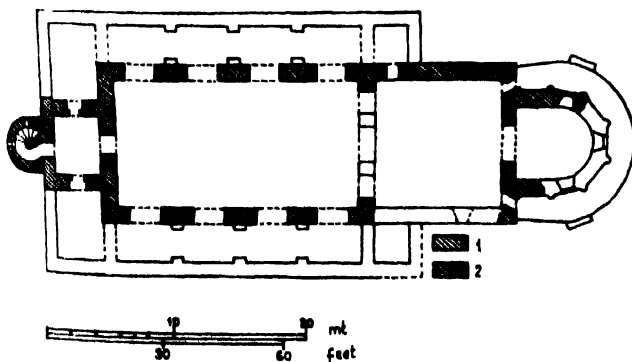
In southeast England large parts of the plans of seven 7th-century churches, the work of foreign masons, survive. They form a remarkable, homogeneous, and distinctive group — a contemporaneous series probably impossible to parallel elsewhere in Europe at so early a period. These churches — six in Kent (three in Canterbury and one each at Rochester, Lyminge, and Reculver) and one in Essex (Bradwell on Sea) — are dated from evidence in Bede. The Abbey Church of SS. Peter and Paul in Canterbury (FIG. 459) was founded in 597 and not yet finished in A.D. 604. The churches at Reculver (FIG. 460) and Bradwell (FIG. 461) were begun in 669 and shortly after 653 respectively. St. Pancras, Canterbury, is of similar date. The "stilted" apses (i.e., apses whose terminal curves are struck from a point well to the east of the chancel arch) are a sign of Byzantine influence in at least one case, with polygonal outer faces like that of S. Apollinare in Classe, Ravenna. The chancels were separated from the naves by a triple opening, and the naves provided with a narthex, or western porch, and with various small chambers, flanking the church. In those at SS. Peter and Paul, Canterbury, early archbishops and kings and queens were buried. Where only two chambers were



Church at Bradwell on Sea, Essex, ground plan (from Clapham, *English Romanesque Architecture*, 1930).

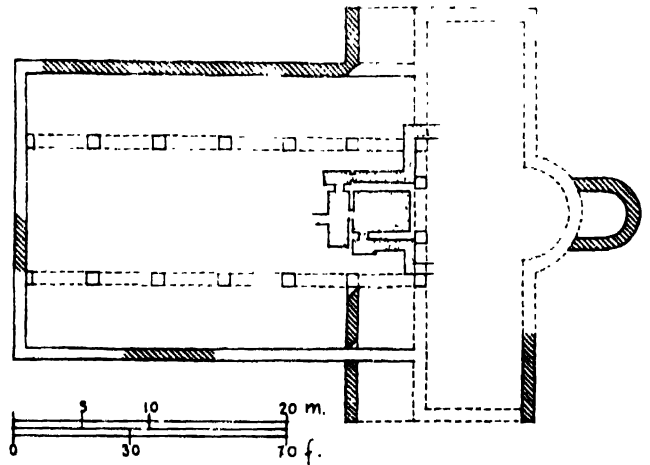
present, they were placed as at Bradwell, on the north and south sides, overlapping the junction of chancel and nave, with the entrance to the north chambers from the chancel and that to the south chambers from the nave. Such chambers are a common feature of 5th–6th-century churches in Syria and North Africa but were early abandoned in Rome and western Italy. The retention of the two chambers in the Kentish plan points either to conservatism in their authors or a more directly Eastern origin. There is not much surviving Continental material of the period, but there is, so far as it goes, an entire absence in Rome or Gaul of the apse of the form and proportions of the English group. The seven buildings, then, probably reflect Oriental influences transmitted via Italy, rather than Roman influence. The churches were mostly built of bricks from demolished Roman ruins and had floors of *opus signinum*, an extremely hard mixture of cement and powdered bricks. The triple arcade separating nave and chancel is a feature paralleled in North African churches.

A later phase of building at the end of the 7th century is represented by the church at Brixworth, Northamptonshire (PL. 290; FIG. 461), "perhaps the most imposing architectural memorial of the 7th century surviving north of the Alps" — an aisled basilica of four bays. The plate shows the original walls (plastered over) to the height of the roof; the triple arcade between the nave and the chancel has been destroyed and replaced by a single large later arch. Beyond the chancel can be seen the apse, which is of polygonal form externally. The arches are turned in two rings of Roman bricks. It was a building of great spaciousness and strength, as one may see if one mentally demolishes the side walls of the nave and restores the arcades. The large church at Abingdon, known only from literary sources, had an apse at both the east and the west ends; this feature occurred also in the first Saxon cathedral at Canterbury. The Abingdon version of this plan was a century earlier than the earliest instance in Germany. The Northumbrian group of churches shows less trace of Oriental influence than the



Church at Brixworth, Northamptonshire, ground plan. Key: (1) 6th-century walls; (2) 10th-century walls (from Clapham, *English Romanesque Architecture*, 1930).

Kentish. Benedict Biscop, founder of the famous monasteries at Monkwearmouth and Jarrow, drew his masons from Gaul. Nothing that certainly belonged to these churches survives except the tower structure at Monkwearmouth; from this it can be inferred that the walls of the nave of the 7th-century church (A.D. 685) were 31 feet high to the base of the gable; the tower was in two stories and opened at ground level into a porticus on the north and south. The porch preserves its stone barrel vault. The chief interest in the Northumbrian 7th-century group of churches lies in those built by Bishop Wilfrid at Ripon, York, and at Hexham. In general they reflect the work of contemporary Merovingian Gaul. The late-7th-century church at Hexham, judging by literary descriptions, was elaborate and of considerable size, with colonnades to the nave, aisles with galleries above, chapels probably in the aisles, crypt, turret staircases, and other features (FIG. 462). The 8th and 9th centuries are the most obscure period in the history of English architecture. One must assume that most of the great buildings, great cathedrals or abbeys on the scale of the church at Brixworth or larger, continued in use until the Danish in-



Hypothetical reconstruction in plan of the church of St. Andrew, Hexham, Northumberland.

vasions, and that the bulk of new architectural effort went to the creation of the numerous minor churches indicated by the volume and distribution of sculpture.

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Rupert Leo Scott BRUCE-MITFORD

Illustrations: PLs. 274-291; 10 figs. in text.

ANGOLA. The Portuguese colony of Angola on the Atlantic coast of Africa, bounded by the Belgian Congo, Rhodesia, and South-West Africa, is one of the African territories whose aboriginal cultural forms have been most successfully preserved. About 99 per cent of its 4,150,000 inhabitants belong to the great Bantu family; their artistic expression is in the main stream of the great African plastic tradition, of which they represent in the southwest a peripheral, but by no means secondary, sector (see BANTU CULTURES). In the absence of great urban settlements and important archaeological centers, the distribution of indigenous art forms has the same diffuse character as that of the population, which is scattered with comparative uniformity over most of the territory. As well as indigenous art, there are a few buildings of direct European derivation.

In all central Africa, in the regions south of the virgin forests, from the Gabon to the Ruvuma in eastern Africa, the rich development of the plastic arts is generally accompanied by a high level of craftsmanship. It is probable that this ability has been spread by the highly developed native states, dating from the 10th century, which extend in a continuous strip from the lower Congo to the Zambezi River and to Niassa. The kings of these autocratic states and their officials (occasionally including the mothers, wives, and sisters of the sovereigns) derived their rights from myths that sometimes ascribe to them a divine origin. Their courts, like those of the Sudan and Upper Guinea, were centers of highly developed artistic craftsmanship.

In the hinterland of Angola, beyond its northern and eastern boundaries, lay the old kingdoms of the Congo and Luba-Lunda. Lunda extended as far as the upper reaches of the western tributaries of the Kasai (from its sources down to the Kwango River), and the influence of the Congo kingdom extended to those of Ngola (Angola) and Matamba, almost as far as the Cuanza River. The influence of a highly evolved sculpture and craftsmanship is still evident in all these regions, even deep in the territories occupied by the Mbunda and Ngangela tribes, just as during the 16th and 17th centuries,

the local ruling families were influenced by chiefs of the Lunda (Balunda) who emigrated from the east (the Yakala, or Jaga, lords of central Angola). This applies above all to the Bailundu, Bihé, and northern Ngangela ethnic groups and to the Ambo-Humbe in the south. Among the Ambo-Kwanyama in the territory of the Finnish mission have been found images (now at Mainz) of the ancestors of Mandume and of his predecessors. These are the last evidences of a plastic art that attempted to portray the forebears of princes of the dominant families for purposes of ancestor worship. But the style of these figures is no longer that of the central tradition of African sculpture, with its realistic conception of the body and features (a conception precisely characteristic of ancestor sculpture among advanced peoples), but that of a peripheral tradition in which the influences of the more advanced culture are weak.

To such a tradition belongs first of all southwest Angola, except for the enclave of the Kwanyama people, which, under the influence of the Yakala, created a highly developed state in southern Angola, in whose surviving remnants important elements of the "Rhodesian" royal culture can still be recognized. Over southeast Angola is spread a type of mask of the Luena-Mbunda, who occupy the region of the upper Zambezi and belong to the same artistic tradition. But the peoples of southwest Angola, some of whom are hunters (the Kwisi, Koroka, and Bushmen), many herdsmen (the Chimba and Kuvala, or Kubai), and some a combination of herdsmen and farmers (among them the Nyanyeka, most of the Ambo, the Handa, the Humbe of the north, the Musho, and the Ndombe), lack all forms of plastic art. Their modest handicrafts comprise braided work, incised designs on containers for milk and fat, children's dolls, and ornaments for women. This absence of plastic art among the Ethiopic herders is the usual pattern in Africa. The agricultural tribes of the interior (Ovimbundu and Ngangela) represent a transition between that group and the more expert sculptors mentioned above: when their chief families have not been subjected to northern and eastern influences, their sculpture is typically and frankly Negroid, with very simple forms, developed from carved posts and tree trunks.

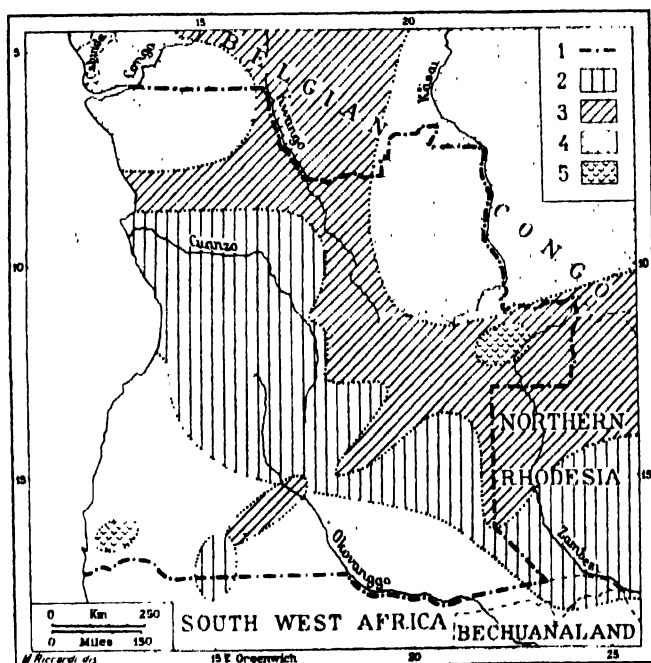
Thus the most important artistic activity is in the east and north, where the Congo kingdom, under the influence of the Christian missions, began, as early as 1500, to combine its own sculptural tradition with such Christian motifs as images of saints and statues of mother and child. Also, in the east the highly intelligent and vigorous Chokwe (Bajokwe) people, having destroyed the famous Lunda kingdom founded by the Luba (Baluba) hunter prince, Cibinda, took over its traditions as a center of refined African sculpture.

Noteworthy in the eastern parts of Angola are the masks used in young men's initiation ceremonies. These masks are made not of wood but of painted bark stretched over a frame of bent branches, and the features are modeled in beeswax. The red (ocher, *ngula*) and white (lime, *mpemba*) paint is today often replaced by the application of similarly colored modern fabrics. Masks of this type are found on the Kwango River among the Yaka (Bayaka), who use them in their *nkanda* initiation; at times they serve as faces for fantastically shaped puppets made of wood and tapa cloth. Farther afield, these masks are also found among the Chokwe and the Luena. On the upper Zambezi, the Mbunda (the oldest people of the Barotse, or Rotse-Luisi kingdom) are the southernmost producers of this kind of mask. Among the Chokwe these masks represent the most important *ma-hamba*, or demons: the *cikusa*, who presides over the boys' initiation ceremonies, spirit of the hunt and fertility; the *ngondo*, a ghostly being of the woods, with enormous eyes made of tubes of gourds; the *chongo*, or "king of the masks," an ancient mask peculiar to the ruling class, with a fiber mantle and a tiara-shaped crown, which also characterized the old wooden statues of ancestors of the chiefs.

To this highly developed sculpture of the Chokwe, evidently derived from the Luba-Lunda ruling class, belongs the unique wooden mask — *mwana-pwo*, "the girl" — which, in combination with artificial breasts attached to a woven twine jacket, was used by men to imitate women, a custom that persists today in nonreligious ceremonies.

The Chokwe, Luena, and Lunda call their masks collectively *akishi* (sing., *mukishi*), a term that properly designates the spirits of the dead. These masks, which are today somewhat secularized, must formerly have played a part in the cult of the dead, and even today certain men appear masked to represent the dead at the initiation ceremonies (*mukanda*).

The zone of the most highly refined wood sculpture extends from the territory of the Congo River to the Yaka, Pindi, and Chokwe-Lunda tribes and from there as far as the Luena. This sculpture usually represents ancestors but is also used for magic purposes. A magical substance kept in a little horn is placed in the umbilical region or inside the head of the image to invest it with the power to protect its possessor and to help him inflict harm on his enemies or commit thefts; images of the dead are placed under beds, sacrifices are offered to them, and their aid is invoked. The statues



Angola: distribution of art objects. Key: (1) Boundaries of Angola; (2) columnar, or tree-trunk, sculpture; (3) naturalistic sculpture; (4) "fine" sculpture; (5) cave art.

erected at the sites of the old courts of the Chokwe and Lunda princes were particularly famous for artistic excellence. But in recent times the authentic art has greatly degenerated, even in the production of the chairs of chieftains, which are richly carved with high reliefs of genre scenes.

It is to the great credit of the Museu de Dundo of the Companhia de Diamantes in Lunda, and Vilhena, its director in the middle of the 20th century, that the excellence of this Chokwe art has been recognized in time to collect all surviving works. In this museum native carvers are employed to copy the ancient masks and statues of ancestors, thus keeping alive the people's interest in their own art and preserving it from the destructive influences of Europeanization. Periodic intertribal assemblies serve the same purpose, bringing together members of the society from all the tribes of eastern Angola and western Belgian Congo. During such assemblies performances by masked dancers from the various regions offer unique occasions for a comparative study of the sculpture and dancing of the peoples of the central-western Bantu region.

This main area of sculptural activity includes the clay sculptures and beautifully made utensils of the Chokwe, whose principal ornamental motif is a feminine face or head, and also the beautiful head-shaped urns of the Luena, which reveal southeastern influences. The rest of Angola presents a very different picture. In regions that had no great states, the most highly evolved figurative art disappears. On the borders of this area, among the Ngangela, the Luacze, the Lumbi, and the Ambo-Kwanyama, we find scarcely any traces of such art; instead of naturalistic sculpture in the round, there are elongated, stick-shaped forms, which barely suggest the human figure and which were obviously developed from the conception of the sacred tree as the abode of the ancestors. Carved posts are often the only remaining ancestor images. Among the Mbundu on the plateau of Benguela only the heads of clubs (formerly used as insignia of the chiefs) are richly carved, revealing traces of a courtly art. The artistic quality of the masks has greatly degenerated; they imitate the more finished forms of the interior (the Luimbi, Ngangela-Mbuela, and Mbunda), and the highly developed gourd carving shows whole scenes of initiation dances taken over from the eastern peoples.

Still another artistic activity, widespread only in the interior and in the east, is the decoration of walls of huts with ornamental and figurative patterns. Here, too, the colors formerly used were confined to red, black, and white. Only in the interior, in the well-built, quadrangular houses with hipped or pyramidal roofs, are found the walls of interwoven branches cemented and plastered with clay and cleanly whitewashed: the "sketchbooks" of the natives. On these walls are reproductions of everything that serves the villagers as a mnemonic image or esthetic decoration, from ancient traditional pictures of masked dancers to modern pictures of such European vehicles as automobiles, trains, airplanes, and bicycles, contrasted with such older forms of transportation as matting litters and baggage porters. Here and there Chokwe sand decorations reminiscent of the sand pictures of southern India are executed in color on the walls of granaries; they are supposed to ensure an abundant food supply. The ancient magic significance of these decorations contrasts sharply with the flower patterns which are the most recent productions of this type and which introduce a new element into African art.

Prehistoric rock pictures (see PREHISTORY and PALEO-AFRICAN CULTURES) have been discovered only in southwest Angola in the territory of the Kwisi hunters: the Citundu-Hulu (a granite mountain situated in the steppe around Kapolo-polo, southeast of Mosamedes) is covered with countless incised drawings, usually geometric but occasionally naturalistic (antelopes, giraffes, and zebras). Two caves discovered in 1954 also reveal paintings of a similar style and traces of human occupation which, together with the state of preservation of the pictures, suggest an age of only a few centuries.

Certain elements of the geometric incised drawings on the rocky walls of the Citundu-Hulu are reminiscent of similar rock engravings in South-West Africa (Franzfontein) and of the forms discovered and copied by Wilman in southeast Africa. On the other hand, the geometric rock drawings seem to be connected with the much more modest ones discovered by J. Redinha in eastern Angola (the territory of the Luena on the upper Zambezi). The paintings, however, are unique for their style in all Angola. The Kuvale herders ascribe them to the Kwisi, but the latter deny any knowledge of them.

Earlier reports on rock pictures in the Bihe Plateau can no longer be verified. No datable prehistoric findings of artistic worth have yet been made in Angola. The so-called Tumbian (Lupemban and Ndolian) culture, which is linked to the neolithic, is essentially characterized by artifacts of unpolished stone; clay figures or other artistic products are absent.

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NOTE: Tribal names of the Bantu people are frequently prefixed by Ba-, Ma-, or Wa-.

European penetration into Angola since its discovery by the Portuguese in 1482 can be seen in the prevailing architecture, which shows Portuguese and monastic influences, together with characteristics of its African surroundings and elements of the architecture of Brazil—a result of trade with that country. The development of such an architecture, on which the baroque influence has had a pronounced effect, continued almost without interruption through the 17th and 18th centuries. Outside the principal centers of São Paulo de Loanda, Benguela, and São Salvador, there are important ruins and baroque monuments at São José do Encoje and at Muxima. In some cities (e.g., Nova Lisboa and Lobito) there are airports and railway stations of very recent construction.

São Paulo de Loanda was founded in 1576 and rebuilt by the Portuguese between 1650 and 1700. In the upper city are various monuments: a late 17th-century fortress remodeled in the 18th century (now the seat of the Angola Museum, which houses arms, furniture, primitive art, and historical relics), the governor's palace, the archbishop's palace, and the façade of the Jesuit cathedral, which dates from 1600. In the lower city, on the shore of the bay, the Church of Nazareth (1670) is similar to churches contemporary with it in Brazil. Characteristic are houses of the oldest type, with a two-storied central section and two single-storied wings, painted ochre or pink with white windows and doors. Also common are the mid-18th-century houses built for the nobility, with very ornate windows and balconies. On the hill overlooking the city a Carmelite church, now restored, was erected in the 17th century; its beautiful cloister, campanile, and interior show Italian influence.

Benguela, founded in 1617, preserves in its streets and houses the remains of its ancient splendor. The Church of Our Lady of the People is the most beautiful example of 18th-century baroque architecture in Africa; the oratory of St. Michael and a font in the sacristy are especially worthy of note. São Salvador, founded in 1534, was the old capital of the kingdom. There are ruins of a cathedral and masonry remains enclosed in the governor's palace.

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Illustration: 1 fig. in text

ANIMALS IN ART. See ZOOMORPHIC AND PLANT REPRESENTATIONS.

ANTELAMI, BENDETTO. Sculptor and architect (b. ca. 1150, d. ca. 1230). The master's very name, and his insistence upon qualifying himself as a sculptor, would support the hypothesis that he belonged to one of the guilds of civil builders, called "Magistri Antelami," of the Valle d'Intelvi on Lake Como, which were active in north Italy during the 12th century.

The earliest of his known works is a relief of the *Deposition* (PL. 292) in the right transept of the Cathedral of Parma, signed and dated 1178. All the aspects of Antelami's style are already present in this work: the fertile inventive faculty (the original amplification of the iconographic scheme is to be noted); the penetrating, analytical observation of reality combined with the ability to abstract, to subordinate detail to the vision of the whole; the calculated expressiveness together with organic form; the apparent harshness that is, in fact, pure energy; the grasp of the most diverse aspects of reality and life, which by elimination of the merely anecdotal, produces symbolic images of a pervasive humanity, partaking, even in the humblest act, of the divine.

In conception, the relief is the embodiment of sculptural energy: the figures, constructed in the austere taste of rigorously geometric form, simplified structurally to the utmost, emerge imposingly from the background plane, deriving a monumental value from the firmness of their poses, and the rhythms of the composition are locked into a unity, stabilized by means of the strong verticals and horizontals.

As to stylistic derivations, no direct influence can be established from the sculpture of Wiligelmo (Guglielmo da Modena) or from those currents of taste that were successively characteristic of Emilian sculpture; and equally irrelevant are the abstract decorativeness of the Como-Lombard current (capitals of the Cathedral of Parma, 1140-50) and the vivacious, abbreviated manner of Niccolò (active in Piacenza in 1123) and his followers there.

However, rather close analogies may be noted with the sculptures of the choir screen of Modena Cathedral, the work of the Maestri Campionesi (1160-75), but these indicate not so much direct influence as derivation of both works from the common source of the style of Provence. There are also strong reminiscences of the classical tradition, in both the general equilibrium of the composition and such details as the armor of the soldiers and the sun and moon with radiating petals.

A fundamental element in Antelami's art is, therefore, his knowledge of French sculpture and that of Provence in particular (St. Gilles, St. Trophime at Arles), a knowledge which declares itself so deeply and consistently from the very beginning of his activity to his later works as to imply a direct and protracted contact, experienced with passion and without reserve, even if originally developed and pervaded by the plastic energy and structural solidity of Emilian-Lombard sculpture. The hypothesis is therefore not without merit that during his youth he made a prolonged stay in Provence, where he may even have put into practice the ideas he had acquired (cf. capitals of the east side of the Cloister of St. Trophime at Arles and the *Dream of the Wise Men* and the *Flight into Egypt*).

In the Parma *Deposition* the relationships with Provençal sculpture are evident in the rigid structure of the figures and their presentation in rhythmic vertical series; in the facial types; in the fine, metallic hardness and the flow of the drapery folds; in the ornamental motifs (the quatrefoil and triangles in the garments of the feminine figures and the *niello* decoration of the background); and in the iconographic motifs (the *Deposition* as represented at St. Gilles shows the Church and the Synagogue subjugated by the Archangel Raphael).

With respect to the original purpose of the relief, the most likely hypothesis is that it was a part of the decoration of a choir screen, which probably included as well: a marble plaque (Parma Museum), much damaged but still distinct in its interesting iconography (Christ, angels, the symbols of the Evangelists, and four Fathers of the Church); three capitals (also Parma Museum) decorated with scenes from Genesis and the Kings of Israel, to be attributed to an assistant of Antelami; and the four lions bearing columns in the Cathedral of Parma.

For this church, Antelami also executed (ca. 1180) the episcopal throne, with telamons, lions, and, on the sides, two reliefs: a St. George and — exceptional theme for Romanesque iconography — the Conversion of St. Paul. The sculptor's interest here turns to expression in mass, realized through a study of articulated forms, so that the volume is both animated and extended by unexpected bursts of release, powerful and dynamic.

In 1196 Antelami undertook the construction and sculptural decoration of the Parma Baptistery (PLS. 292-294). No other Romanesque building in Italy displays in its decorative scheme such strictness of thought and such complexity of allegorical invention. Antelami's fantasy — this continual, lively, inventive faculty — translated into images the most subtle implications of liturgical and moral literature with an originality never again to be equaled.

The jambs of the north portal, or Portal of the Virgin (1196-1200), present reliefs of Mary's genealogy; on the left, the genealogical tree of Jacob and, on the right, that of Jesse. On the lintel there are three scenes from the life of the Baptist, as well as an inscription that commemorates the beginning of the work; in the lunette, the *Adoration of the Magi*; on the face of the archivolt, twelve figures of prophets with medallions bearing busts of the apostles. High up on the portal are two angels, and at the sides of the building are two niches, the one on the left with figures of David and Isaiah, the one on the right with those of Solomon and the Queen of Sheba (ca. 1208-10).

The symbolism of these representations is designed to emphasize the concordance between the Old and New Testaments and their convergence in the birth of Christ and the glorification of the Virgin, the connection between prophets and apostles, the acts of the Baptist, the genealogical trees of Jacob and Jesse, all stressing the end of one era, with the coming of Christ, and the beginning of another.

The lunette of the west portal, known as the Portal of the Redeemer (1200-04), depicts for the first time in Italian Romanesque sculpture the scene of the *Last Judgment* (PLS. 292, 294). The archivolt, decorated with figures of the apostles, has at its apex the Tree of Life (or of the Cross) with two angels, and in the lintel is the Resurrection of the Dead.

The left-hand jamb, divided into panels, shows the Six Works of Mercy; that at the right, in spaces bordered by a vine tendril, the Parable of the Laborers in the Vineyard combined with the Ages of Man and of the World. Antelami's invention is here particularly original. For the Works of Mercy the source is the Gospel according to St. Matthew, but this is absolutely the first time that they are connected with the *Last Judgment*. Likewise, the symbolic bond between the Parable of the Vineyard and the Six Ages of Man and of the Earth has no iconographic precedent.

The south portal, called the Door of Life (ca. 1204-08), bears in its lintel three reliefs: the Blessing Christ, the Lamb of God, and the Baptist. In the lunette there is represented an allegory of life based on the fable of Barlaam and Josaphat, of Buddhist origin: a young boy has taken refuge under a tree, but two animals — Day and Night — are gnawing at its roots, while a dragon waits menacingly, spitting flames. The boy, amidst such perils, is intent only upon tasting the honey he has taken from a hive. At the left the sun is twice represented (on high in a disk decorated with a crescent, below, on a horse-drawn chariot); at the right there are analogous representations of the moon; in the archivolt, a floral frieze.

Around the Baptistery runs a frieze of plaques containing floral motifs and human and animal figures, both naturalistic and fantastic (ca. 1206-11). The artist's intention here is essentially decorative, with no terrorizing undertones. With the exception of the centaurs, sagittarii, sirens, and basilisks, all of which symbolize demonic powers, the other images are introduced for purely formal reasons.

The sides of the Baptistery in which are set the Portals of the Virgin and of the Redeemer are decorated laterally with pilasters, the reliefs of which are turned toward the portals. They show the Theological Virtues and Chastity, in the form of feminine figures, each accompanied by two minor virtues (ca. 1206-11).

In the interior of the Baptistery the intrados of the arches of the first architectural order are decorated with reliefs (ca. 1204-11). Corresponding in scheme to the three portals, the scenes represented are narratively and symbolically related to those of the lunettes outside: the *Flight into Egypt*, inside, follows the *Adoration of the Magi* outside; the scene of David playing the harp, accompanied by musicians and dancers, corresponds to the *Last Judgment* (the allusion is to the future kingdom of the just around Christ); with the allegory of life is associated the *Presentation in the Temple*, so that the initial scene of Christ's public life is the symbol of the beginning of the neophyte's new life.

The niche over the altar contains Christ Blessing, the Symbols of the Evangelists, and, at the sides, two archangels slaying dragons. In the other 12 niches are figures of angels and of the Virgin Annunciate.

The antependium of the main altar represents in relief the figure of St. John the Baptist between a priest and a Levite; perhaps the decoration of the smaller baptismal font is also symbolic (ca. 1208-10).

The capitals of the lowest order of the galleries consist of animals and small human figures. Only one is sacred in subject, namely, Daniel in the Lion's Den. In the central portion of the first gallery the personifications of the months and the seasons (ca. 1206-11) must at one time have been somewhat differently disposed between the columns. The series is in-

complete because of the absence of Summer and Autumn. Iconographically it is exceptional to find the Months, the Seasons, and the Signs of the Zodiac combined. The scale and dignity of the conception as well as the monumental placing should be noted.

In so vast an enterprise as the sculptural decoration of the Parma Baptistery, Antelami must surely have had numerous collaborators; however, in every detail of the execution one feels vividly the master's actual presence. Many of the sculptures are by him alone; many were produced under his personal direction and in part by his hand; and there is not one for which he did not contribute at least the design. Hence the stylistic unity of the whole work is a thing of perfection, even if the hands of assistants are more obvious in some parts than in others — for instance, in many of the reliefs of the animal frieze outside, in the lunette with the *Flight into Egypt*, and particularly in certain portions in the interior.

In view of the high quality of some of the reliefs, the only problem of collaboration concerns the cycle of the Months. Antelami must surely have designed and partly executed the September and October, for they are superior to the others, which should be attributed to pupils.

As in the *Deposition* in Parma Cathedral, so in the sculptures of the Baptistery the preponderance of the Provençal influence in Antelami's style is observable. Furthermore, in the period separating these two works, Antelami must have come into contact with the Gothic sculpture of the Île de France, more especially with the early façade of Chartres Cathedral (1145-55). These French influences, filtered through the usual process of clarification and reinvigoration, are, however, fused into the style of a mature artist and are most evident in unimportant details. Also by this time the distant echo of Byzantine art, still to be sensed in the *Deposition*, has vanished, although there are still frequent reminiscences of classical art.

Deriving from these cultural trends, the formal language of the master runs a richly personal gamut of expression. His compositions become increasingly free and skillful, his forms more elegant and at the same time monumentally individualized without losing their sculptural firmness; grave and withdrawn, yet intensely expressive of human and religious passion, they are in accord with the spirit of the Romanesque.

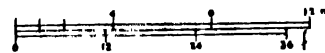
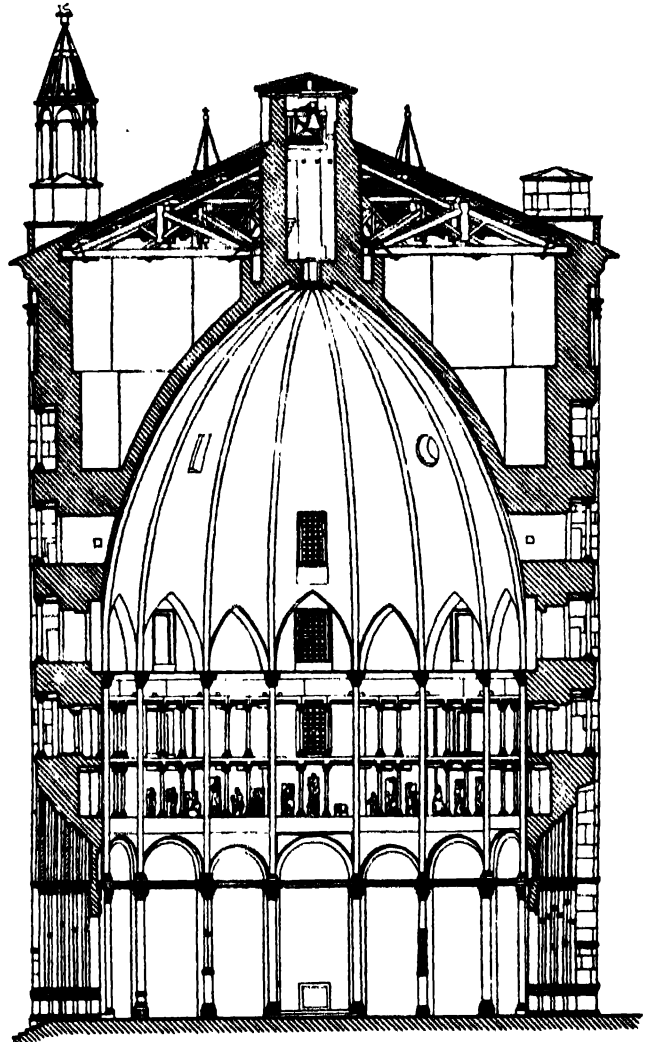
The sculptural decoration of the Parma Baptistery is assimilated, with an admirably calculated exactness, to the organic architectural scheme of the building itself. Indeed, esthetic analysis would suggest that sculptor and architect were one and the same person. This problem of Antelami as architect, given the esthetic evidence on the one hand and the total lack of documentary proof on the other, is today perhaps the most lively and uncertain of all.

The Baptistery is octagonal in plan with the corners marked by pilasters. The first story is about one-third the height of the building; the three portals and the decorative sculpture already described are all in this section. Above it are four orders of galleries separated by trabeations, and these in turn are crowned by a blind gallery with arches. The recurrent horizontal trabeations distinguish the Parma Baptistery from earlier arched gallery systems such as that in the Cremona Baptistery (1167). This motif, of classical origin, derives possibly from Provence, where it was used to unify the decoration of church façades (St. Gilles, St. Trophime at Arles). From Provençal models may come also the proportions of the portals, while the influence of the Gothic declares itself especially in the upper part of the building; the interior, decahexagonal in plan, with arcades below, two orders of architraved galleries, and a soaring ogival cupola, is clearly Gothic in inspiration (FIG. 470).

The over-all impression is precisely this demonstrable contrast between the gravity of the Romanesque and the dynamism of the Gothic, the first dominating the exterior, the second the interior. The building is Romanesque in its vigorous compactness, in the organic and stable connection between the architectural members, in the deep, elemental strength with which individual details are balanced and synthesized. In the interior, with its play of contrasting linear tensions, is to be noted not just a reconciliation of Romanesque and Gothic forms

but a vital encounter between Romanesque spirituality and Gothic spirituality, between the concentrated solemnity of the one and the extroversion of the other.

The few known dates relative to the construction of the Baptistery tend more to confuse than to aid the resolution of the problem. The building was begun in 1196; the sacrament of baptism was administered within it in 1216, but at that



Parma, Baptistery: section.

time it was far from complete. The construction that had been interrupted in 1216 must have been resumed about 1248 and then again suspended. It was only in 1270 that the Baptistery was finally consecrated. The balustrade of the rood was executed in 1302.

Despite many uncertainties and differing opinions, our conclusion is that this is a building of the highest artistic quality constructed as a unit according to an organic and coherent plan; that although the construction extended over a lengthy period, there were no appreciable departures from the original design; and that Antelami should be considered responsible for the entire conception, even though he may not have actually supervised all phases of the execution.

A very confused problem arises with the Cathedral of Borgo S. Donnino (now Fidenza): the construction, begun in 1179, was destined to drag out for a considerable time, with a resumption of brisk activity between 1214 and 1218. Here also Ante-

lami's participation should be considered both in architecture and in the sculptural decoration.

The unfinished façade (PL. 297) is an attempted compromise between the Lombard Romanesque (Cathedrals of Modena and Piacenza) and the architecture of Provence (especially St. Gilles). From the latter influence are derived the angular towers, the columns set against the wall at either side of the central portal, the attempt to tie the three portals together by means of relief decoration, and the position that the human figure assumes in the architectural framework.

The iconographic program of these numerous sculptures is exceedingly varied: Biblical events and personages; episodes from the Gospels; incidents from the life and miracles of S. Donnino. Some reliefs allude to privileges and titles obtained by the church, while others represent pilgrimages or symbolize the struggle between good and evil, or the sins of man, or the malignant power of the devil.

Taken as a whole, the façade of the Cathedral of Borgo S. Donnino cannot be considered a work of art. The decorative scheme is interesting but not harmonious, and in general, the realization falls short. The attempt to unify the three portals with sculptural decoration is not at all successful; structure and decoration fall apart and barely manage to achieve a kind of picturesque discursiveness.

However, there are here, in a minor tone and almost as if they were first efforts, tendencies, traits, that appear again in the Baptistery at Parma. Apart from the prevailing mediocrity, certain sculptures are so closely identifiable with Antelami's art and of a quality so high that they can be attributed only to him.

As to the church itself, its most obvious characteristic is the combination of Romanesque and Gothic architectural elements, the former predominating in the nave, the latter in the choir and apse. In its entirety, this effort to reconcile the two diverse styles is not unlike that realized in the interior of the Baptistery of Parma.

There are other sculptures, both inside and outside the church, which show analogies with Antelami's style: a pilaster, a relief with God the Father and the Fall of the Rebel Angels; the holy-water stoup which rests upon a telamon and is itself adorned with half figures, among them that of Pope Alexander II; the reliefs placed between the ribs in the vault of the apse (Christ Enthroned, the Symbols of the Evangelists, and angels, stylistically interesting because they display a more advanced study of Gothic sculpture); and other small reliefs of more tormented form under the suspended bases of the apse columns; on the exterior, in a niche of the belfry, a Madonna and Child.

The most likely hypothesis is that Antelami's activity at Borgo S. Donnino was very intermittent and broken up over a long period. The master might have participated in the general plans for the church and might have furnished, between 1180 and 1190, the general scheme of the decoration of the façade, without having been able to supervise the actual work, which would have been entrusted to stonecutters of various tendencies. Considerably later (1214-18) Antelami was probably consulted for the construction of the crypt, of the choir, and of the apse of the church, altering substantially the original design. Certainly he executed the reliefs on the façade, with the two families of pilgrims escorted by angels, the four panels below with fantastic animals, the griffon attacking a deer (in the arch of the right-hand porch), the statues of prophets David and Ezekiel, and finally, the figures of the Redeemer in the apse.

The statues of the prophets are assuredly the finest: the vigorous composition, the lineal cadences which emphasize with firmness both the easy transition and the sharp contrast between the various planes, the intensity of expression, the poses, so vitally realized, resolve on a high level the problem of bringing into balance Lombard, Provençal (here strongly revived), and Gothic forms.

The group of buildings constituting the Abbey of S. Andrea at Vercelli (1219-27; PLS. 296, 297) brings up once more the problem of Antelami as sculptor and architect. The lunettes over the central and left portals of the Abbey church (1219-25) present indubitable characteristics of Antelami's style. The

central, representing the martyrdom of St. Andrew, is actually by the master himself; the spacious composition, the skillful formal articulation, confirm his increasing awareness of Gothic modes. The lunette over the left door is, however, by a follower, and represents Cardinal Guala, founder of the church, in the act of offering a model of the building to the Redeemer. Also by a follower of Antelami are the lunette over the side portal, toward the cloister (with the Lamb of God), and the stoup.

The major problem, however, is not that of the sculpture but of the architecture. Once more there is a deliberate effort to blend Gothic and Romanesque elements in an organic architecture. However, Gothic forms now predominate; thus, granting the attribution to Antelami, it might be inferred that he made a third trip to France about 1219. This would account for the extremely rapid transmission to S. Andrea of contemporary French Gothic architecture (Abbey of Vaux de Cernay, Cathedral of Laon). But equally strong affinities relate S. Andrea to the Baptistery of Parma and to the Cathedral of Borgo S. Donnino, and not in any mechanical manner, but precisely as if the three works had their organic place in the line of evolution of an individual taste. On the exterior, the persistence of Romanesque forms, stable, compact; the gallery, with single and coupled columns, which in its decisive horizontality cuts across the whole width of the façade and is repeated at the sides as well as in the transept and choir; the general design of the portals (their setting, bases, and moldings); the lofty, octagonal, pointed lantern, its ribs abutting on small, unsupported columns — all these are motifs that recall, each in turn, the Parma Baptistery and the Cathedral of Borgo. In the interior of the three structures, the impetus of the Gothic is rigorously controlled and resolved in structural clarity, a solemn calmness of rhythm, while the importance given the function of light in exalting the linear values and the structural scheme is progressively accentuated.

In conclusion, it is necessary to admit that the attribution to Antelami of a large role in the construction of the Cathedral of Borgo S. Donnino and of S. Andrea at Vercelli greatly extends the limits of this master's activity as an architect, originally confined to the Baptistery at Parma. Such amplification may not add to his reputation for artistic achievement of a high quality but does add to his standing historically speaking, and chiefly it credits him with having perceived promptly the changing taste of his epoch and with having attempted to assimilate the new forms of the French Gothic both swiftly and with noteworthy results. The problem, which in the writer's view must be resolved in this way, is still an open one. Many scholars, beginning with Verzone and Toesca, admit that the Parma Baptistery, the Cathedral of Borgo S. Donnino, and S. Andrea at Vercelli are homogeneous in style; De Francovich, in his fundamental work on Antelami (1952), definitely ascribes the three buildings to the master. This theory has been discussed by E. Arslan (1954) and by R. Wagner-Rieger (1956); the latter, rejecting the attribution to Antelami personally, considers the three buildings to have been constructed by the same guild but ignores the sculptures, which necessitate consideration of direct participation by Antelami, a participation which after the Parma Baptistery can scarcely be restricted to the decorative sphere alone.

To the last period of Antelami's activity must be ascribed the pulpit of the Cathedral of Vercelli (S. Eusebio), executed probably in 1126 and dismembered in 1570. Only fragments of its decoration remain, now in the Museo Leone at Vercelli: one of the three Magi and an adoring angel, a St. Michael with the dragon, a winged lion (evangelist symbol), and a capital with two interlaced dragons. To the master himself are due the figures of the angel and of St. Michael, whose rhythmic, still-classic naturalism is so free and unconstrained as to be inexplicable without reference to the French Gothic. The actual execution of the other figures must be in part by an assistant.

Antelami was always surrounded by numerous disciples and collaborators, and his sculpture was a vital contribution to Italian art in the 13th century. Among the works that relate directly to his school are the Months in the Museum of the Cathedral of Ferrara, which come from the left portal on the

south side of the Cathedral; the equestrian relief representing Oldrado Da Tresseno (Milan, Palazzo della Ragione, 1233); the arch on top of the main portal of S. Marco in Venice; the Months in the Pieve at Arezzo; the scenes of SS. Martin and Regulus in the atrium of the Lucca Cathedral; the *Deposition* of Tivoli Cathedral; the *Crucifixion* of S. Maria di Roncione (Museum, Perugia).

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Goffredo ROMATI

Illustrations: PLS. 292-297; 1 fig. in text.

ANTILLES. The West Indies archipelago consists of three main groups of islands — the Bahamas, the Greater Antilles, and the Lesser Antilles — extending eastward from Florida and Yucatán out into the Atlantic and then curving southward to the coast of Venezuela. In the pre-Columbian period, there developed on the archipelago a succession of cultures which must be considered as a whole, without regard to later differentiations. However, since great political and historic differentiations occurred after the Conquest, it seems desirable to discuss separately the countries which had achieved independence by the mid-20th century (Cuba, Haiti, and the Dominican Republic) or which, although not self-governing, had displayed some degree of artistic originality (Puerto Rico). The territories dependent on Britain, France, and Holland will be discussed as a group.

SUMMARY. Pre-Columbian period (col. 473). Post-Conquest period (col. 475): *Cuba; Haiti; Dominican Republic; Puerto Rico; British possessions; French possessions; Dutch possessions.*

PRE-COLUMBIAN PERIOD. Archaeological excavations have resulted in the establishment of a sequence of four periods, the first of which, according to carbon 14 tests, began about 2000 B.C. and the second in the 1st century.

During Period I, the Greater Antilles and the southern part of the Lesser Antilles were inhabited by small groups of fishermen, of unknown origin but possibly migrants from the adjacent mainlands, who neither tilled the soil nor made pottery. The last survivors of these groups in Cuba at the time of Columbus were known as the Ciboney, or Guanahatabey.

During Period II a new group of Indians entered the Antilles from South America, introducing agriculture and pottery making. There is good reason to believe that this group brought with them also a new language belonging to the Arawakan family of tropical South America and that they were the ancestors of the four Arawakan-speaking groups of Columbus's time: the Ineri in Trinidad; the Taino in Puerto Rico, Hispaniola (modern Haiti and the Dominican Republic), and eastern Cuba; the Sub-Taino in Jamaica and central Cuba; and the Lucayo in the Bahamas. The newcomers apparently occupied only the Lesser Antilles and Puerto Rico during Period II, leaving the rest of the Greater Antilles in control of the Ciboney.

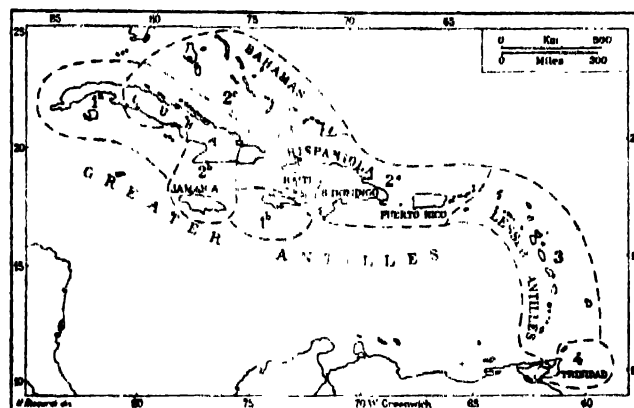
Period III was marked by Arawakan expansion into the rest of the Greater Antilles. The original Ciboney inhabitants were driven back into the southwestern peninsula of Haiti and the more remote parts of Cuba, which they still occupied at the time of Columbus. Arawakan culture had previously been quite uniform, but in this period it began to show great local variation, part of which at least seems to indicate cultural borrowings from the Ciboney.

The Carib Indians arrived from South America during Period IV. They bypassed Trinidad and wrested the remainder of the Lesser Antilles from the Arawakans. They apparently inherited the Arawakan language, since the tongue spoken there then was of Arawakan type rather than Cariban. Although they frequently raided Trinidad and the Greater Antilles, the Caribs never conquered those islands.

At this time, in the Greater Antilles, the Taino had developed the religious cult of *xemis*, tutelary spirits or genii, which also spread to the Sub-Taino and the Lucayo, replacing the cultural diversity of the previous period with a limited cultural uniformity from which only the Ciboney remained aloof.

None of the Indians of the Greater Antilles survived the coming of the Spaniards for any length of time: they either died from epidemics, were worked to death in the gold mines, or, in Cuba, became assimilated into the Spanish population. A few groups of Carib Indians still survive on Dominica (Lesser Antilles) and in Central America, to which the British transported them; it is said that a village of Ineri Indians still exists in Trinidad.

Neither the Ciboney nor the Carib Indians produced a significant art form; the Arawakans, however, developed four that are worthy of mention. During Period II they introduced into the Antilles a type of pottery, thin, fine, and hard, with graceful, flowing lines,



Antilles, distribution of native cultures: (1a) Ciboney of Cuba, (1b) Ciboney of Haiti; (2a) Taino, (2b) Sub-Taino, (2c) Lucayo; (3) Carib; (4) Ineri.

which surpasses in technique and variety of form the pottery produced there in later periods. Bowls with convex sides are typical of this period, and the decoration consists primarily of white-on-red painted designs, generally curvilinear, the spiral being a common motif. Bands or areas of color are prevalent rather than linear figures. These areas are occasionally outlined with incisions, and sometimes cross-hatched, incised lines take the place of paint. Decoration in relief is rare, though some relief figures occur.

In Period III the Arawakans in the Lesser Antilles produced geometrically carved stone objects, often called "Carib stones," though apparently they were made before the Caribs arrived in the Antilles. Many of these are stone axes, but others are objects with no apparent function. All have curved, earlike projections reminiscent of those in the fleur-de-lis.

The Taino pottery of Period IV in the Greater Antilles belongs to a tradition quite different from that of the Period II pottery and appears to have developed locally in Hispaniola (Haiti) during Period III. The vessel walls are thicker and generally coarser, and the shapes are simpler and less graceful than those of the earlier pottery. The typical vessel consists of a round or boat-shaped bowl with sides curving in, a keel, and an incised design on the shoulder above the keel. The designs are linear rather than in zones of flat color or bands and are practically never painted. Large lugs modeled in the shape of heads are characteristic. They represent human beings or such animals as the bat and the monkey, and some may have been meant to portray the *xemis* or other deities of the Taino.

Finally, there are monuments and cult objects associated with the worship of the *xemis*; the prototypes of these objects may have been perishable wooden objects, but the earliest known examples are in stone, bone, and shell and date from the latter part of Period III. They occurred at that time in both the Lesser and the Greater Antilles but apparently died out in the Lesser Antilles with the advent of the Carib during Period IV. They were most highly developed among the Period IV Taino of Puerto Rico and Hispaniola, but some examples occurred among the Sub-Taino and Lucayo.

The principal monuments consist of flat, rectangular or oval areas outlined with earthen embankments, rows of upright stone slabs, or both. The slabs are unheven, but some bear incisions corresponding to the carvings found on bedrock and on boulders elsewhere in the Caribbean area. Upright stone pillars, a few of which are also carved in relief, are occasionally set in the center of these enclosures. According to the conquistadors, the enclosures were used both as ball courts and as dance plazas and the carvings were meant to represent *xemis*.

Associated with these enclosures are a group of carved stone ceremonial objects. These include collars that participants in ball games may have worn about their waists, elbow-shaped stones, and

three-pointed stones (perhaps *xemis* intended to ensure success in growing cassava), all elaborately carved with geometric designs and representations of animals and human beings.

According to Ramón Pané, who was commissioned by Columbus to study the religion of the Taino, these Indians used caves as places of worship. In these caves have been found representations of the *xemis*, including petroglyphs and carved statues, wooden stools, and snuffing tubes through which the priests inhaled the snuff that, Pané says, was put on the platforms on the heads of the statues.

Other paraphernalia for the worship of *xemis* are found in the dwelling sites. They include finely carved bone sticks, corresponding to those which, according to Pané, were used to induce vomiting as a part of the purification ritual, and amulets of stone, bone, and shell, most of them in the form of *xemis*. Among the most elaborate amulets are male figures with flexed arms and legs and prominent penes; according to the conquistadors, the Indian warriors wore these on their foreheads to ensure success in battle. From the same source we learn that the Taino were accustomed to portray *xemis* on their household utensils; this is probably the function of the carvings in the round and in relief of both human and animal figures which occur on Taino stone axes and pestles, as well as of the modeled head-shaped lugs on the pottery already mentioned.

Some authorities trace the origin of the cult of *xemis* and the human and animal figures associated with it back to South American prototypes, especially to the large, elaborately modeled head-lugs found on pottery of the Barrancas style at the mouth of the Orinoco River. Others, however, including this writer, believe that they were probably derived from Middle America and point to similarities to the ball courts and stone carvings in that area, as in the case of the stone collars described above.

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Irving Rouse

POST-CONQUEST PERIOD. *Cuba.* Cuba was discovered by Columbus in 1492, and its capital, Havana, was founded in 1519. The development of colonial architecture actually began in the 17th century. Its structural features—a central patio, a wooden roof, shuttered windows, and balconies with wooden grills or railings—display strong Mudéjar influence. The 18th century saw the rise of baroque architecture, patterned after models in Cadiz, Seville, and Malaga.

Santiago de Cuba (1515), one of the oldest Cuban towns, is today, like Santa Clara and Camagüey, one of the principal cities of the island. Trinidad is a typical colonial city. The old quarters of Havana are made up of narrow streets and enclosed plazas. Among the colonial buildings worthy of note are: the Castillo de la Real Fuerza, built between 1568 and 1589 as a defense for Havana and subsequently much altered; the Castillo de San Salvador de la Punta, built in the 1580s under the supervision of the Italian engineer Giovan Battista Antonelli; the Castillo de los Tres Reyes or del Morro (Morro Castle), on the rocky cape at the entrance to Havana Bay; the Fortaleza de San Carlos de la Cabaña (La Cabaña; 1763-74), built by the military engineer Silvestre Abarca and the architect Pedro de Medina. Also noteworthy are: the Havana Cathedral; the Oratory of the Jesuits; the Franciscan monastery, completed in 1737, and the convent of S. Clara, founded in 1634; the Church of La Merced, begun in 1755, and its Lourdes Chapel, decorated by the Cuban painter Miguel Melero. Among the noteworthy government build-

ings are the Palacio de Intendencia, or del Segundo Cabo (ca. 1770), and the Palacio del Gobierno, or de los Capitanes Generales (1776), which, together with the Havana Cathedral, are the best examples of Cuban colonial baroque architecture.

In the 19th century, eclectic architecture became established in Cuba, especially in the residential sections; on the other hand, the neocolonial style became fashionable in the period 1925-40. In 1902, Havana began to develop into a modern city, with wide streets and numerous residential suburbs, under the influence of the United States. Among the noteworthy recent churches are those of St. Rita, St. Augustine, Corpus Christi, and the National Sanctuary of St. Anthony of Padua. Since December, 1923, the National Museum has housed the Museums of History and Fine Arts, with a fine collection of Cuban paintings of the colonial and republican periods as well as works of Murillo, Zurbarán, and others of the Spanish school; exhibitions of contemporary painting and sculpture are also held there.

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Marta de CASTRO

Haiti. The western part of the island of the same name, which is also known as Hispaniola. A French colony after 1660, it became independent in 1804. Haiti possesses ruins of the famed citadel of La Ferrière, built by Christophe, who as King Henri I ruled briefly from 1811 to 1820.

The capital, Port-au-Prince, founded in 1749 and several times destroyed by earthquake and fire, has among its notable buildings the Government Palace, the Palace of Justice, and the 18th-century French cathedral.

Dominican Republic. The island of Haiti was discovered (1492) by Columbus, who named it Hispaniola. The first settlement was made at La Navidad on the northern part of the island in what is now Haitian territory (1492-93). The site of the second settlement, La Isabela (1494-1500), irregular in outline, was partially excavated in 1945. In the interior are preserved the ruins of the old colonial cities of Azua, La Vega, and Santiago de los Caballeros and the colonial sanctuaries at Boyá and Higüey.

Santo Domingo (since 1936, Ciudad Trujillo) was founded in 1498. It is laid out according to a rectangular pattern after the style of the Spanish settlements of the Reconquest and was originally protected by the Torre del Homenaje (1505-07) and enclosed within walls (1543-1702). Noteworthy among the various strong points and gates is the Puerta de S. Diego (1571-78). The great barrel-vaulted arsenal still stands. Several Gothic houses, two-storied and with one or more patios (e.g., the Casa del Cordón), have been preserved from the first decade of the 16th century; this style prevailed until the middle of the century (Colegio de Gorjón). Outstanding are the Viceregal Palace (1510), which introduced into the New World the feature of an open gallery between two projecting wings; the Palacete de Engombe (1535); the Governor's Palace, and the City Hall, restored in the 19th century. No trace of native art is evident in the architecture.

The interior of the cathedral is Gothic-Isabeline, and the main façade is Renaissance; it has a separate campanile, beautiful plateresque decoration, and several memorials; the archbishop's throne is also in the plateresque style (1540). It has one of the richest collections of treasures in America. The monastic churches of S. Domingo, La Merced, and S. Francisco, begun in the second quarter of the 16th century, are of the Isabeline type. The stucco decorations in the Chapel of the Rosary in the Church of S. Domingo offer several cosmo-theological representations unique in American art. Various 16th-century hospitals are today in ruins or have been partially modified. The hospital of S. Nicolás de Bari, established in 1503, introduced into the New World the cruciform type prevalent at the time of Ferdinand and Isabella; in the ancient enclosure is preserved the Chapel of the Conception (built after 1519), with a Gothic-Andalusian façade. S. Domingo offers no manifestations of baroque art except for several paintings. Outstanding among the examples of 18th-century architecture of a provincial nature is the Church of the Jesuits (c. 1714-55), with its severe façade and balconies above the lateral naves.

Modern painting and sculpture have been vigorously stimulated by the establishment of a National School of Fine Arts (1941). International contributions are the Basilica de Higüey and the monumental Columbus Beacon.

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Erwin Walter PALM

Puerto Rico. Today a United States possession, the island was discovered on Columbus's second voyage (1493) and was not colonized by the Spaniards until 1508. Caparra, the first city, whose ruins have been partially explored, was abandoned in 1520-21, when the present capital, San Juan, was founded.

The ancient citadel of S. Catalina in San Juan was built between 1533 and 1540 and largely rebuilt in the middle of the 17th century. In accordance with the plans of Battista Antonelli, the antiquated defenses were replaced between 1591 and 1600 by the massive bulk of the Castle of S. Felipe del Morro, one of the most imposing examples of military architecture in America, which was continually remodeled until the end of the colonial period. In the 17th century the city was enclosed within walls, and at the end of the 18th century the building of the fortress of San Cristóbal completed the fortifications. The old cathedral, begun in 1540, finished about 1587, and remodeled in the 17th century, retains a great deal of its original arrangement.

The church of the ancient Dominican convent (S. José), dating from the second quarter of the 16th century, is of the same type as the conventual churches of the time of Ferdinand and Isabella. In the seminary and the cathedral treasury are preserved a Renaissance *Virgin* and other fairly good Renaissance pieces. There are numerous public buildings built or restored during the 19th century: the Town Hall (rebuilt 1796; 1842); the Municipal Theater (1838); the Palace of the Royal Treasury (rebuilt in 1850); the naval arsenal; the Governors' Palace, which is an adaptation of the fortress of S. Catalina; and the White House, remodeled in 1779 and 1826. Toward the end of the century, the city expanded widely and in the 20th century has developed greatly along North American lines. There is also a museum.

In the interior of the island, at S. Germán, is the Church of Porta Coeli.

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British possessions. Almost all public buildings in the West Indian Federation, formerly the British West Indies, are solidly built of brick or stone in the Georgian style, which makes few concessions to tropical climatic conditions. The most notable group is at Spanish Town, formerly the Jamaican capital. Also worthy of mention are those of several of the Leeward Islands, Antigua, Nevis, the Windward Islands, and Grenada, and on the islands of Trinidad and Barbados. Memorable among the military installations, of great importance when the Caribbean Sea was the scene of naval warfare during the latter half of the 18th century, are the wonderful range of buildings at English Harbour, Antigua (late 18th cent.), which, although severe in design, are of the high architectural quality of military works of the same period in England. Also notable are the churches, in stone or imported brick (often brought in as ballast), of the usual Georgian type, rectangular, with squat, square towers; they contain monuments of fine workmanship but are of English rather than local manufacture. Only a few of the old plantation houses have escaped destruction; they were built as a rule of timber on a platform of masonry with a single or double loggia and occasionally square corner towers for defense. Kingston has a museum and a gallery rich in local art.

Angus W. ACWORTH

French possessions. Outstanding in the French possessions of Martinique and Guadeloupe are the typical dwellings at Pointe-à-Pitre, capital of Guadeloupe, and the charming 18th-century churches of Fort-de-France, capital of Martinique.

Dutch possessions. In the Netherlands West Indies, only Curaçao has monuments of more than local importance. The type of construction, originally Dutch, was modified during the 18th century because of climatic exigencies.

Worthy of mention in Willemstad are: Fort Amsterdam, with its great ramparts, built according to the old Dutch system introduced after the close of the Spanish period (1634); the Government House (1700-1800); the Evangelical Church; the Waterfort; the tower of Caracas Bay; the Portuguese-Jewish synagogue, Mikveh-Israel (1732); the houses in Punda and Orabanda (18th cent.); in Leeuwenhockstraat, the former hospital (1853), the museum, the Habasi mansion, formerly Welgelegen (1700); in the Scharloo district, several buildings dating from the 17th century and beginning of the 18th; among the mansions on the south side, the Brievengat (about 1750, restored), Ronde Klip (early 19th cent.) and, toward the west, the 17th-century houses called "Ascension" and "Savonet."

Murk Daniel OZINGA

Illustration: 1 fig. in text

ANTIQUÉ REVIVAL. The search for inspiration in the past—the more or less decisive abandonment of contemporary stylistic habits by both artist and public taste, in order to turn toward periods of history relatively distant in time and possessing a fairly clear-cut general physiognomy—is a phenomenon that can be observed in various cultures and at different periods, though its more obvious and more conscious manifestations are to be found in the Western world in more recent times.

SUMMARY. General problems (col. 478). Classical antiquity (col. 481). The Middle Ages (col. 484). Humanism and the Renaissance (col. 489). The Reformation and the Counter Reformation (col. 493). Baroque and the 18th century (col. 493). Romanticism (col. 496). Modern art (col. 498).

GENERAL PROBLEMS. It is necessary to make clear what is understood by "antique revival" as it is used here. It is not to be identified with a sporadic and personal phenomenon depending on the psychological inclinations of a few artists—the more so as in the Western world, where this phenomenon has been amply discussed in theoretical writings, instances are not lacking of genuine conflicts between individual artists and the taste of their time. Nor is the return to antiquity to be understood as a stage in the normal process of artistic development, as a sort of pause, or period of rest and meditation, after some important achievement. Equally, it is to be distinguished from a latent conservatism, lagging behind contemporary taste, such as is sometimes found in the works of great masters in their old age. Rather it signifies a deliberate about-face, a reconsideration on another level, of presumably insoluble problems within the framework of contemporary tradition.

Antique revival is thus to be distinguished from tradition (q.v.); indeed, in a certain sense it can be considered its opposite, if by tradition is meant the spontaneous and partially unconscious transmission of themes, accepted techniques, and conventions in the representation of figures and forms (which, moreover, in peripheral or isolated milieus, and especially in the folk art of the West, assume a particularly rigid aspect). This explains why signs of a return to antiquity appear less marked or even, in the strict sense, nonexistent in all those sectors of the history of art in which the traditional element, by reason of particular religious or social conditions or through the tendency toward an intrinsic immobility of themes and artistic forms, has assumed an overwhelming predominance. Examples of this situation can be found in Oriental civilizations and, in general, in primitive, provincial, and folk art (see PRIMITIVISM; PROVINCIAL STYLES; FOLK ART).

However, from time to time, even in these sectors there appear individual tendencies, or more generally, moments of taste marked by admiration and imitation of the ideals of the past. This occurred, for example, in the Mesopotamian world,

particularly in the neo-Babylonian period (605-539 B.C.), when a deliberate attempt was made in temple construction and in the style of reliefs (PL. 298) — as also, for that matter, in religious practices and in epigraphy — to reproduce famous models of the national dynasties of the end of the 3d and the beginning of the 2d millennium B.C. In Egypt, though more strictly conditioned by the weight of tradition and convention, some instances of a similar archaistic attitude also occur, particularly in the later periods, beginning with the Saite dynasty (7th cent. B.C.); these can be attributed to an analogous politico-religious concern with the revival of national consciousness or, conversely, to an attempt on the part of foreign dynasties to conform to the national ideal (PL. 298). Later, in Persia, an attempt was made by the Sassanian kings to establish a link with the glorious age of the Achaemenids by adopting the latter's artistic conventions of representing figures in profile — a feature of Near Eastern art — as against the local preference for fullface representation, which had flourished widely in the Parthian period. This, however, never developed into a genuine revival.

Oriental civilizations provide other instances of this tendency to imitate the art of ancient times. In China, for example, the opposition of the Ming to the Mongol Yüan dynasty indicates a return to ancient and purely Chinese tradition, most significant in its legal and general cultural aspects, but also reflected in art. Naturally, since certain of the greatest Yüan painters worked on into the first Ming period, and (because of the progressive Sinicization of the rulers) the great works of the Yüan period generally conformed to Chinese esthetic tenets, the revival of antiquity was limited, but it can be seen especially in copies of earlier works and in the imitation of earlier bronzes and ceramics. The factor of tradition in the entire development of Chinese civilization remained constant. Again, in Khmer art "the period that marked the return of royalty to Angkor and the construction of the 'Mebun' and of Pré Rup represents a true antique revival in decoration," while on the contrary "sculpture seems only to continue Koh Ker with little originality" (J. Boisselier, *La statuaire khmère et son évolution*, Saigon, 1955, p. 16).

In the West, it is tempting to identify the antique revival with classicism (q.v.), which in Europe, mainly for political and religious reasons, has consistently harked back to the forms of Greco-Roman antiquity. But classicism, even if it can, in a certain sense, be represented as a "revival," is also something different and more specific, by reason of the restraint and formal severity of its ideal, qualities which occur in figurative as well as nonfigurative arts, while its aspirations toward universal principles take it far beyond the range of problems of imitation.

The return to antiquity is also to be distinguished from the concept of primitivism (q.v.), for here, at least in 19th-century art, the styles used as models are chosen and praised not because they are considered formally more perfect or more complex than those of modern times but because of the spiritual values they are held to contain. The inspiration of the antique shows in fact a greater affinity with — and in a certain sense is parallel to — the phenomenon of exoticism (q.v.); for both seek their noble models afar off, the former in time, the latter in space.

Clearly, the phenomenon of revival is not purely and simply a problem of formal imitation (which can be considered rather as one of its techniques) but carries with it other, more complex ideals and suggestions and is concerned with many things other than exterior forms — with a renewal of the concept of man and nature and the changing views of a religious, political, or social order.

We have already remarked the appearance of these ideals in the ancient Orient in the form of a tendency toward the exaltation or legitimization of nations and dynasties. But they are also to be found in the Greco-Roman period and in the midst of Greek civilization itself; and there they tend to develop into a more intimate and conscious quest for cultural moments of the past which are felt to be nobler and richer in *ethos* than the present. And from this arise two opposed aims — that of political restoration and that of Arcadian escape.

Until the 18th century the return to antiquity was based above all on the study of Greek and Roman remains and monuments. Subsequently there occurred a definite enlarging of the bounds of the figurative arts and an acknowledgment that European civilization had to be considered as part of a world picture (fruitful precedents of this attitude, whose consequences on art are worthy of more detailed study, can be observed in the time of the Emperor Frederick II, in Florentine Neoplatonism, in the late Gothic period, in mannerism, and in the baroque). But until the 18th century, geographical limitations, the state and accessibility of collections, and the fame of the more important discoveries such as that of the *Laocoön* all exercised a determining influence on the selection of models to be studied. It should be noted, moreover, that even today the range of art tradition reelaborated by contemporary artists in their various forms of revival or exoticism is notably restricted in comparison with present-day historical culture, which acknowledges the validity of works of art of all civilizations and every epoch. This is balanced, however, by a profundity of insight which is at times exceptional, capable, almost, of recreating from a copy a lost original and of working a change in habitual critical judgments. The limited range of the field of taste compared with that of knowledge seems to be a general condition; perhaps it provides a psychological explanation of the otherwise incomprehensible blindness of certain periods to the merits of important cultures, as, for instance, that of the Renaissance and the baroque to Byzantine art.

Nevertheless, the influence of the ancient models, even in the centuries in which their choice was most rigorously limited, operated in a very broad way. For some time now scholars have recognized the existence of an anticlassical trend, in character predominantly magical and astrological, deriving from Pliny, Vitruvius, and the writings and apocrypha of Aristotle, which was transmitted through *summae* and scholastic courses and epitomes and whose centers of diffusion were Paris, Padua, and presumably Salerno and other medieval universities. With regard to art, a fundamental influence, affecting even great artists such as Raphael and Hieronymus Bosch, was exercised by the fantastic figures and drawings of the ancients found on gems and in wall paintings. In addition, there are occasional cases, still to be investigated and catalogued, of the survival or revival of preclassical forms; thus we find Celtic motifs in northern Europe or Etruscan ones in central Italy making a reappearance in the work of Romanesque sculptors. At Bomarzo, there is a villa which provides a very curious example of manneristic taste. In this building, itself inspired by imaginary ancient models, not only are there clear imitations of exotic works of antiquity and reconstructions of classical buildings, but the configuration of the ground has also been utilized to reproduce an ancient chamber tomb.

The influence of antiquity was strongly supported by literary means. Greek and Roman antiquity possessed a corpus of literature that proved a continual source of inspiration to artists and writers on art, who were even able to find in a single phrase unexplored possibilities of new forms. The influence is still largely uncharted, but well into the 17th century we find art teachers giving long theoretical and technical disquisitions on ancient artists of whose works not even one replica or copy had survived. Many problems have become fundamental in European culture through making their first appearance in ancient treatises, which were often more widely known than the works of art themselves. As examples one could quote the desire to find an immutable standard of beauty, either according to the largely imaginary canon of Polykleitos (so proverbial that several sculptors adopted this Greek name as an appellative) or according to the proportional system of Vitruvius; the struggle by artists, particularly during the Renaissance, to rise above the status of craftsman and obtain social recognition and even patents of nobility; the concept that artistic and moral beauty was coincident with physical beauty; the emphasis placed on sculptural qualities and on structure at the expense of linear and two-dimensional representation; the preoccupation with perspective in town planning; the necessity, often rather superficial, to identify form and content, which

later crystallized into the concept of "decorum"; and so on. And it is irrelevant that the deductions made seem to us paradoxical and antihistorical; what matters for the history of art is their power of suggestion and their motivating force. At the same time, however, there was a general increase in scholarship. The search for visual documentation was in general preceded by a literary reconstruction of the monuments of ancient painting and urban development. And in certain periods, the Renaissance, for example, and the baroque and neoclassical ages, there were avowed cases of copies, of fabrications, and of almost scientific restorations.

However, in Western civilization (where, as we have seen, the almost continuous process of theorization allows one to follow better all the diverse forms and manifestations of the return to antiquity), the fundamentally religious education and structure of society have given an equal importance to Biblical antiquity, not only as a persistent source of representational themes (often transmuted by classical derivations) but also as embodying a real desire to return to the origins, a wish for spiritual renewal. There was, however, a dearth of monuments, since in the state of knowledge then existing no distinction was made between early Christian and classical remains. What we do find are reconstructions, faithful or fantastic, of some of the religious buildings of Jerusalem, such as the Holy Sepulcher (imitations of which are connected with the revival of a specific cult, diffused as a result of the Crusades, and with the beginnings of liturgical drama) or the Temple of Solomon, to which churches were frequently compared. In this connection, the problem of the return to the origins is important in connection with the Reformation, where we find not only the attitude which opposes religious images but another which favors the creation of new images (see ICONOCLASM).

With the increase in trade, the growth of art collections, and the perfecting of the techniques of reproduction, the various forms of exoticism and of "revival" were gradually replaced by genuine revivals, beginning with the reevaluation of periods previously neglected, such as the Gothic and the baroque, then turning to cultures which were geographically or historically remote, such as Negro sculpture and Mexican art. In these phenomena, a dominant part is often played by "fashion," but in general they have led to the replacement of curiosity by serious study and the substitution of formal analysis for mere caprice. These artistic developments seem to reflect, though with a notable time lag, the theory of the "noble savage," that is, the belief that primitive art or the art of the "primitives" (among whom are included the artists of the early Renaissance) is closer to truth and beauty than the art of more sophisticated periods. This erroneous idea, like those which preceded it, has given rise to some remarkable stylistic advances and widened the horizons of art.

In fact, the antique revival, with its unexpected revaluation of factors extraneous to contemporary taste, should be seen not in antithesis to what is modern but as concomitant and parallel to the tendency toward innovation, for which it often provides essential elements. It is a moment of assimilation preceding the moment of creation (though these "moments" are often harmoniously coincident), history making available its unexplored and unexploited riches. In this dialectic, social consequences are not without their importance. For example, the collecting of works of art, a phenomenon apparently nostalgic in nature, can become in fact an instrument of change (see MUSEUMS AND COLLECTIONS); for experience has shown that the contribution made by museums, the direct familiarity with the art of countries farthest away from us in time and space, is a vital factor, equal to, if not greater in importance than, academic instruction, in the formation and full development of an art that is modern in feeling and style.

Eugenio BARRIS

CLASSICAL ANTIQUITY. To arrive at a precise evaluation of the various tendencies toward a return to earlier themes in Greek and Roman art is not easy. Not only is there a shortage of contemporary literary documents which might show

the possible motivating forces behind these manifestations; it is also difficult to place in their correct chronological sequence occurrences which at first sight seem contemporary with preceding phases of culture, or examples of an unconscious conservatism. The easiest phenomena to determine are those of persistence and of tradition; and here one can say that, aside from provincial dislike of novelty, seen, for example, in the vases of the Sanctuary of the Kabeiroi at Thebes, in central Greece, or in 5th-century Etruscan black-figured pottery, its determining factors were extrinsic, and generally religious. This is the case with the herm of Alkamenes, in which new elements, though less apparent, are as essential as the old. In its control by religion Greece of the archaic and classic periods differs little from the traditionalism of prehistoric and of Oriental art.

Some interpenetration of ancient and modern appears in the Panathenaic amphorae of the 150 years during which the red-figured technique was dominant (usually dated about 530 to 380 B.C.). The painters of these amphorae, though continuing to use the black-figured technique, maintained constant touch, as far as drawing was concerned, with the development of contemporary artistic taste. However, after about 380 B.C. a change occurred. On the side of the amphora destined for the representation of the gymnastic games, the drawings continued in the style of the period concerned; but for about a century the figure of Athena was drawn according to a set scheme in which the pose, the primitive nature of the drawing, and the details of the decoration corresponded to the final stage of the archaic style — the mode of 500–480 B.C. We have here the first timid example of a deliberate seeking after an older style (PL. 299), but it is difficult to say whether it was dictated solely by a sentimental longing for the political greatness of the past or whether we should attribute it to a desire for iconographical precision, determined by religious motives.

However, according to Rumpf, a reaction of undeniably artistic nature and based on theoretical principles occurred toward the middle of the 4th century B.C., beginning in Athens. This consisted of a sort of classicist return to the "noble" taste of the period of Phidias and Polykleitos, and adopted their canons of the balanced distribution of masses (the so-called "symmetria") and of proportion among the various parts of the human body, the harmony of which was expressed in numerical values. This seems, at least, a reasonable inference from the information that Pamphilos of Amphilopolis, head of the Sikyonian school, ran for profit an academy of drawing in which the course lasted 12 years and included mathematics and geometry; an academy of such a theoretical bent, it is claimed, must have had classical leanings.

All this is very plausible; but no painting has survived from which to form a concrete idea of this movement, while Apelles and the other great painters of Pamphilos' and the succeeding generation, who radically transformed the art of painting with a rapidity reminiscent of the Renaissance, do not seem to have been influenced by nostalgia for the past. Although our knowledge of Hellenistic painting is painfully small, it seems that its organic development was not interrupted to any noticeable extent by revivals until the time of Augustus, which in any case concludes the Hellenistic period (PL. 299).

In sculpture the situation was quite different. Here, at the beginning of the 3d century B.C. two opposite tendencies existed side by side. On the one hand, there was an ever more complete and successful attempt to fulfill the ancient desire to impart life to statues, giving movement to the body and expression to the face; on the other, an opposition to this progressive naturalism, in the name, evidently, of that idealism which had constituted the greatness of 5th-century Greece and which, through the works of its philosophers, continued to sustain the minds and spirits of the Greeks and of all those who shared their ideals. To the first tendency belonged all the "Greek" artists outside Athens and a large number inside the city; to the second, a group of Athenians. It is this latter group which interests us here.

Three clearly dated statues, the *Themis* of Rhamnous, the *Dionysos* of the tomb of Thrasylos, and the portrait of *Demosthenes*, all three of the first half of the 3d century, stand out

almost polemically on account of their firm and dignified pose. In comparing a work like the *Apollo* of the Miletos-Cyrene type (assigned by Becatti to the Attic artist Timarchides, who according to Pliny flourished in 180 B.C.) with the *Venus of Milo* — now generally assigned to the period 180–150 B.C. and attributed to the Rhodian school — it is easy to see that the Attic statue, while possessing the broken rhythm typical of the middle period of Hellenistic art, is contained within more regular planes than the other and, above all, that its features, hard and metallic, are quite without that indefinable expression which is the greatest fascination of what many consider the most beautiful marble statue surviving from ancient times.

After 150 B.C. we witness another phenomenon. The antithesis between the "pathetic" and the classicistic currents continued; but although in the initial phase of Hellenism it was the former that prevailed, now the latter triumphs. Works such as the *Laocoön* and the *Farnese Bull*, pervaded by an almost baroque agitation, are definitely in the minority, numerically speaking, compared with the many others in which Hellenistic pathos has been replaced by the most rigorous academic correctness. (It should be noted, however, that according to some authorities the *Laocoön* belongs to the middle of the 2d century B.C.; if this is so, one might conclude that the classicistic reaction was universal, though no doubt with a certain amount of opposition in isolated localities.) This classicizing reaction found favor with many art critics, whose theories were adopted by Pliny and Pausanias, almost our only written sources concerning ancient art. According to a remark attributed to the art critic Apollodoros, who wrote toward the middle of the 2d century B.C., art died in 297 and was finally reborn in 150 — a metaphor which was to be much employed in Western literature, especially from Vasari to Burckhardt.

Unlike the neoclassicism of modern times, which lasted only a few generations, ancient classicism had a long and tenacious life, surviving various interruptions and being quantitatively most productive; for this reason, and also because of the reproduction of the masterpieces of Greek classical art which it encouraged, classicism is the form of art which characterizes the ancient world that came under the sway of Rome. An important contributory factor was the mass production of *objets d'art* destined to embellish sanctuaries and squares, houses, gardens, and tombs. Candelabra, marble tablets, altars, urns, marble or terra-cotta facings for real or imaginary buildings, puteals, large marble vases, doorframes molded in stone, and even funerary statues poured in their hundreds from the workshops of Athens and Rome and other parts of the empire (though always produced by Greek craftsmen), spreading into every region, whence they have now passed in superabundance to the exhibition halls and storerooms of the museums of the world (PL. 300). This type of art is usually known as neo-Attic (see NEO-ATTIC STYLES).

How much of this production deserves the name of art, and how much is mere routine reproduction? And how far does the product of the latter reflect the essence — and how far only the exterior aspect — of a work of art? These are difficult questions to answer in view of the high standard of ancient craftsmanship (see HANDICRAFTS), the indifference of the ancients to this type of problem (what they consistently commend is technical skill, and they seem almost incapable of defining in words those elements in the beauty of a work of art which are intrinsic), and the infinite gradations which lie between these two poles — often in the same individual — and which are not always understood by the creative artist himself. At all events, it is clear that the decorative purpose assumed great importance for neo-Attic artists, and in the end they subordinated to it all other considerations, even those of logic and utility. However, if we are prepared to judge them by what they were trying to express and by the way in which they met the demands of their patrons, who only wanted something with which to embellish their lives, we must recognize that the neo-Attic artists amply fulfilled their purpose. A distinction has been suggested between "classicistic" and "classicizing" artists, the first term indicating those who attained a complete coherence of style in their work because they imitated the

spirit of works of art produced in the classical centuries of Greek art, and the second, those who merely copied with varying degrees of skill and in a haphazard way the exterior elements of the classical works. This distinction would be paralleled by another between "archaistic" and "archaizing" artists, who are differentiated from the others only by the period from which they drew their inspiration. These distinctions, which in any case ought to be examined in relation not only to sculpture but also to painting and mosaics, seem unjustified, since they are based on a criterion that belongs to modern and not to ancient times.

It would be too lengthy a task to examine neo-Attic art in detail. However, two points should be noted. From the revival of classic art until the end of the period covered by the term ancient art, there was a continual alternation between periods of classical inspiration (such as the Augustan and Tiberian age, the age of Hadrian and the Antonines, of Gallienus, of Constantine, and of Theodosius) and those of Hellenistic inspiration — themselves a return to the past. But when dealing with individual periods, one must be careful to speak not of exclusively but of prevalently archaistic, classicistic, or Hellenistic influences; for though the two currents alternated in favor in the Roman world, neither was ever completely forgotten by artists or craftsmen.

Paolino MINGAZZINI

THE MIDDLE AGES. The idea that continuity is lacking between the ancient world and the Middle Ages is no longer generally accepted. Recent scholarship tends to regard the former as an essential and constantly active element in medieval culture, though subject to unhistorical and arbitrary deformations and interpretations. It would, in fact, be more correct to regard antiquity as a continuous, ever-active tradition, a background against which periods of more intensive influence stand out owing to the direct study and detailed examination of ancient works capable of producing a clearly discernible reflection in the figurative arts. However, it should always be remembered that antiquity had more than one meaning for the Middle Ages. Sometimes it meant the late Hellenism of the Mediterranean basin, with varying degrees of Roman and Oriental influence; sometimes the popular current of Roman art, ever present beside that of the court; sometimes the provincial variants of Eastern and Western art; and sometimes even Early Christian art, with its multiplicity of styles. Works created for the imperial court rarely received attention; those anterior to the Roman age, never. With few exceptions, interest was centered on the products of ancient craftsmanship or on debased replicas and copies of greater works.

Perhaps the most typical example of the persistence of ancient tradition is provided by Byzantine art, at least until the break produced by the iconoclastic period of the 8th and 9th centuries. Here the late Roman element, which included among other things a residue of Hellenism, is a necessary and constantly active component, ensuring the continuity of ancient artistic tradition, though not without intermingling with Oriental antirepresentationalism and abstraction. For Byzantine art, as for the art of the East (see above, cols. 478–79), it is incorrect to speak of a revival of antiquity, at least in the first centuries of its development.

In the iconoclastic period, however, the production of secular works such as landscapes, battle and hunting scenes, and similar subjects, suggests the beginnings of a revival. In the mosaic panels of Jerusalem and Damascus (which should be considered as adaptations of contemporary Byzantine works to Islamic taste), the direct observation of reality, the use of true, or inverted, perspective, and the sense of atmosphere pervading the landscapes all indicate a revival of Hellenistic traits within the general limits imposed by Byzantine civilization. Subsequently, with the formation of a Byzantine medieval style, cultural revivals tend to be easier to individualize, though the courtly and literary tone common to most of these manifestations provides them with an almost universal point of contact. A complex network of cultural reforms extended from handwriting to the reestablishment of the palace school of Constan-

tinople and the reemergence of literary genres such as the epigram. Connected with this movement was the production of luxury objects such as the carved caskets (PL. 303) on which such subjects as the labors of Hercules and the adventures of Bellerophon and mythological characters such as centaurs, maenads, and cupids are depicted with a freedom reminiscent of Hellenistic art. In the field of miniature, there are some special instances of connection with antiquity. In some manuscripts (the Vatican Joshua and Ptolemy, the Oppian of the Biblioteca Marciana, Venice, and the Paris Nicander) which are copies of originals of the late Roman period, the composition, the perspective, the sense of atmosphere, and the coloring vary in fidelity according to the period of the reproduction. On the other hand, a more deeply felt elaboration of ancient originals can be discerned in the lively classicism of manuscripts, such as the so-called "aristocratic" Psalters (Paris, cod. gr. 139; PL. 304), destined for the educated and privileged classes, and the texts of the Church Fathers, in which every allusion is a pretext for allegories and mythological scenes connected with the sacred themes (Paris, cod. gr. 510).

The influence of antiquity was equally formative, even if more subtly elaborated and therefore less obvious, on the mosaic workers of Daphne. It bestowed rhythm and equilibrium on their compositions, resolving in subtle harmonies the chromatic expressionism of the Nea Moni of Chios and softening the ascetic severity of the monastery of St. Luke in Phocis. Details of landscape and the anatomical touches contained in the extremely purified rendering of the human body readily accord with the medieval system of vision, while the classical serenity of the countenances merely enhances their ecstatic fixity of expression. Classical influence must have been even more in evidence in works created for the imperial court in Constantinople, if we are to judge by the *Deësis* (PLs. II, 454, 455) in St. Sophia, the *Pantocrator* of the age of the Comneni in the church of Kariye Camii, or the wonderful series of 11th- and 12th-century ivories (Utrecht, Washington, London, etc.).

It seems probable that even at Daphne and, in a more concrete manner, in the paintings at Ochrida and Nerez in Yugoslavia, antiquity was known and studied through the medium of Early Christian works. At Mileševo, the broad squaring off of the figures, the solidity of the modeling, and even the distinctive patterns of the drapery clearly reveal the influence of these works. At Sopoćani, and later at Boiana and Gračanica, the more limpid, profound, and intimate individuality, the beautiful serenity of expression, and the skillful use of color to model the forms represent the culmination of this so-called "neo-Hellenistic" movement, in which the influence of antiquity is more formative than it ever was in the courtly art of Constantinople prior to the downfall of the Comneni.

In the West, if we except the cultural influences emanating from the Byzantine empire, beginning with that of the so-called "Theodosian" renaissance, which was felt even at Rome (sarcophagus of Junius Bassus; the Symmachorum diptych; PL. 301), we cannot speak, at least until late in the 7th century, of antique revival, but only of its survival. In the Carolingian age however, the idea of antiquity is the dominating force in all political, cultural, and artistic activities, though the idea is enlarged, with fruitful results, to include the manifestations of the Early Christian era. Architectural and artistic monuments of the two capitals of the empire, Rome and Ravenna, and of the Gallo-Italic area, where the "Theodosian" renaissance had been most widely diffused, together with luxury objects of Byzantine origin which had reached Italy after the resumption of relations following the iconoclastic truce, were copied and imitated with such enthusiasm that they ousted the wonderfully vigorous yet basically more barbarous stylization of Irish art; and in its place there emerged an artistic climate related to the classical world and to the styles which had been inherited from it by Byzantine art. Despite substantial differences in feeling and style, there is an obvious connection between S. Vitale in Ravenna, on the one hand, and on the other, the Palatine Chapel of Aachen, Germany, the chapels of Valkhof (near Nijmegen) and Muisen (near Malines) and subsequent derivations of the Ottonian period, while the angels of Germin-

gny-des-Prés (near Orléans) show similarities with those shown attending Pope John VII at S. Maria Antiqua in Rome, and the statuette of Charlemagne on horseback (PL. 303), in the Louvre, indicates a return, though on a miniature scale, to the taste for equestrian monuments. In other centers of ivory production, notably at the Abbey of Lorsch, copies were made of Early Christian work such as the five-plaque ivory pieces and the diptychs containing several rows of scenes, sometimes with such stylistic and iconographic fidelity as to give rise to problems of dating (e.g., the Milan diptych). There was also a widespread revival of Early Christian themes and subjects in manuscript illumination, accompanied by the accentuation of classical solemnity or by reminiscences of ancient impressionism, according to the character of the individual schools of miniaturists (PL. 304). At Rome, too, there was at this period a real return to Early Christian art, which was considered a genuine expression of antiquity. In the basilicas, mosaics returned to the manner and proportions of their earliest examples; in addition to the subject matter of the 1st century and its related style of composition, there was an attempt at impressionism which, through the inability of the artists to blend their colors into an over-all harmony, remained chromatically disorganized. Roman reliefs imitated Early Christian simplicity as well as its representational themes. In some parts of the Paliotto in the Church of S. Ambrogio at Milan, antiquity is presented not only in the grouping of the figures but also in the pictorial and almost impressionistic quality of the modeling.

In Ottonian art, the last of the courtly styles, antiquity appears through the medium of Carolingian works and as the result of a revival of Byzantine influence; it can be seen in the arrangement and grouping of compositions and in the vigorous but uneven style of sculpture. Perhaps its most unmistakable appearance is in productions of a more mannered nature, where the stasis of certain clearly defined images lost that extreme and almost unearthly tension which was a most essential characteristic, or in the works created on the periphery of the Ottonian state, such as the Milan ciborium or the Tempietto of Cividale, in which old local traditions played an important part.

The Romanesque style being of popular origin and tendency, as is reasonable to suppose through its affinities with the Romance languages, antiquity did not operate in it through previously established formulas, as in the art of courtly circles, nor by means of a revival such as we find in the age of Humanism. Instead, it was studied directly, in its works, especially in those, more numerous and widely diffused, of popular and provincial tendency; and thus it provided suggestions and material for the passage of the new art from dialect to language without in any way altering its nature. Although not assuming a determining function in the first phase of Romanesque sculpture in Aquitaine and Burgundy, the influence of Roman and Early Christian provincial monuments was an essential factor in the formation of the vigorous and pictorial Provençal style of St. Gilles and St. Trophime in Arles, which mark the greatest point of contact between French Romanesque sculpture and antiquity. The legacy of antiquity to Wiligelmo da Modena (q.v.), however, resides mainly in external features, such as the relationship between figure and arch, the technique of continuous narration, and the use of rinceau decoration; for even when he copies from Roman provincial reliefs the figure of Eros with a torch, the spirit remains distinct and different.

In central and southern Italy the influence of antiquity is more noticeable, not only because of the presence of numerous ancient monuments but also because there already existed a tradition going back to Early Christian times and because cultural ties and exchanges with Byzantium had never been interrupted. In point of fact, the prevalent architectural scheme was the basilican church with columns and wooden roofing, faced on the exterior with dwarf galleries, particularly in the main centers of culture, such as Florence, Pisa, Rome, Monte Cassino, Salerno, and Monreale. The formal elements and proportional niceties of S. Miniato al Monte at Florence and the Cathedral of Civita Castellana (PL. 302) anticipate the Humanist spirit of Renaissance works. Bases, capitals, cornices,

corbels, and doorways often imitate ancient models, and even the incrustations of the walls, though altered in form through the influence of Byzantine and Islamic art, vigorously revive the classical tradition of polychrome revetment.

The influence of ancient sculpture is prevalent in much Romanesque work in central and southern Italy. It is visible in the work of Guglielmo in Pisa; in that of Roberto at Lucca, where it acquires a Lombard flavor; in the Months of the Baptistry of Pisa, which have an almost Hellenistic pictorial quality, with Byzantine leanings; in the rinceau decorations of the columns in the same building, where the influence is more purely classical; and in the vaguely Etruscan derivation of some Tuscan work. At Rome, the study of Early Christian sarcophagi produced the candelabrum of S. Paolo Fuori le Mura. In Apulia, antiquity, which had already appeared in the capitals of the Cathedral of Troia and in the great window of the Cathedral of Bari, became a formative influence in the sculptures of Castel del Monte (ca. 1240; PL. 302), one of the most vivid and vital works of classicism, though one must allow that a contributory factor in their excellence is a vein of northern Gothic naturalism.

But it was above all in Campania, where the abbey of Monte Cassino provided a constant link with Byzantine culture, that the influence of ancient works was most directly felt. The vigorous beginnings of this influence can be seen in the second pulpit of Salerno; thence it passes through an uninterrupted series of monuments, not all of which reveal in equal degree the imitation of antiquity, until it reaches the works of the age of Frederick II in Capua. Here the plastic qualities, the proportions, the treatment of large planes, and the technique of using the drill all reveal a careful study of antiquity (PL. 303). The works of sculpture produced in the age of Frederick, while forming part of a vigorous and vital movement, constitute in many ways an almost academic return to Roman practice; in addition to the revival of sculpture in the round, the influence of antiquity appears as a dominating force in the iconographical elements of the statue of the emperor clad in a toga and in the busts of Pier delle Vigne and Taddeo da Sessa, as well as in the bust of "Capua," so called, in which recent restoration work has revealed an unsuspected subtlety of expression and modeling. This strain of classical tradition, variously elaborated by the sculptors working at Capua and Castel del Monte, was destined to pass on through the less important work of Pellegrino da Sessa to the Ravello pulpit, which is perhaps dependent to some extent on the manner of Nicola Pisano (PL. 303).

In the formation of the art of Nicola, the antique revival of southern Italian sculpture was an essential element, more important than the study of the classical sarcophagi of Pisa and Siena, which left their mark only in the attitude of some of his figures. Also significant was the widespread diffusion of that current of Byzantine painting which is improperly called "neo-Hellenic." In contrast to the linear and almost popular manner of true Romanesque painting, in which reminiscences of antiquity, when there are any, are always of secondary importance, the spread of the new Byzantine style marks a return to those courtly and traditional aspects of ancient classicism which were necessary to the new art in order for it to achieve real autonomy. Many paintings of the 13th century (which, on the basis of a highly developed culture, prepared the ground for the variety of regional art) give the impression of being, as it were, derived at second hand from ancient models—an impression which is always created when the intermediary was Byzantium. The culmination of this second-hand study of antiquity was reached in Rome in the solemn and serene monumentality of the figures of Pietro Cavallini. In contrast, the attitude of Arnolfo di Cambio seems very different, much more vigorous and fruitful. This artist combined an early classicizing education under Nicola with a personal experience of Rome and its art; and from the latter were derived several of his representational themes—such as the sacred figures from his two ciboria, the angels supporting a wheel, the figure of Eve, and the saint on horseback—the hieratic quality of various of his works, and also certain aspects of his style: its rigorously squared-off quality, its high standard of modeling,

and the over-all effect, at one and the same time reminiscent of ancient models and yet entirely free, of the sculptures of his Roman and Florentine periods.

In other parts of Europe, after A.D. 1000 the influence of antiquity was not very efficacious. The sculpture of Aquitaine and Provence has already been mentioned in connection with the origins of Romanesque; it should be added that various subjects deriving from late Roman antiquity are to be found in the sculpture of Auvergne. Further, before Romanesque architects began to be interested in structural experiments, or in areas where these experiments were pursued with less vigor, there are examples of basilican churches with columns, on the ancient model, such as St. Michael's, Hildesheim, or SS. Peter and Paul's, Hirsau, in Germany; and in France, St.-Martin-d'Ainay at Lyons and the abbey of Cluny, rebuilt under the partial influence of the old St. Peter's. These examples are more numerous in regions such as Burgundy, where architecture consciously tended toward a simplified style. In the Church of St.-Front in Périgueux and other lesser buildings of the same type, we find Early Christian elements from the eastern Mediterranean mingled with more recent Byzantine influence. In painting antiquity exercised a modest influence through the medium of Benedictine culture; this is particularly visible in Roman frescoes of the beginning of the 13th century.

In official seals and even more in coins, the poses, symbols, and devices of ancient models passed through Byzantium to the West, breaking some iconographic restrictions. Seals of the Western empire preserved the symbol of the *aurae Roma*, while the *bullae* of the papal chancery continued to use Early Christian themes. Of a more definite classical stamp are the augustals of the Emperor Frederick II, which are virtually modeled on the gold coins of the Roman empire, with Frederick's bust depicted in profile and the eagle on the obverse.

In the initial phase of Gothic sculpture, first in the Île de France and then, to a lesser degree, in other parts of Europe, the predominant naturalism, which progressively freed the human figure from the massive quality of the Romanesque manner and from its constriction within rigid architectural limits was certainly a necessary evolution and a product of the culture of the times; but it derived considerable encouragement and assistance from the study of antiquity. Without giving rise to an academic revival, examples of classical sculpture in the round and of its physical and psychological characterization exerted a definite influence as elements of culture and helped to mark out the path which was to be followed. This is particularly so in the case of the early sculptures of Chartres, Paris, Reims (PL. 303), and Strasbourg, the stylistic significance of which is comparable to that of the works of Nicola Pisano and his circle.

However, it is not the work of great artists but the general diffusion of classicism through the intermediacy of Byzantium that dominated the 13th century; the classical element existed not in exact imitations but as a vast force in the formation of taste, just as in the writings of Dante or Boccaccio the poetry of Vergil and the language of Cicero appear only as sources of inspiration and of preparation which have been entirely absorbed. The change from accentuation of the vertical to spatial extension, the search after luminosity, and the adoption of simplified systems of construction are the result of a number of factors, among which the thorough absorption of antiquity played a special and formative part. In certain cases, as in the painting of Pietro Cavallini (PL. 304), the transmission of the Roman tradition through the great Early Christian monuments is obvious, whereas in the works of Giotto and Andrea Pisano it is impossible to discover precise sources in antiquity; but their "classicality"—that limpid intuition which, abandoning the medieval vision, approaches the threshold of naturalism, subtly individualizing form and psyche—reached its maturity, like the great French sculpture of the first phase of Gothic, to which it is in some degree related, as the result of an inspiration deriving from antiquity, which acted on the spirit of their works without revealing itself in actual imitations.

HUMANISM AND THE RENAISSANCE. No clean break occurred between the Middle Ages and the Renaissance, either in admiration for antiquity and the extent of its imitation or in relations with tradition; it would be hard indeed to separate these elements in the work of an artist such as Jacopo Bellini (PL. 309). Nevertheless, during the Renaissance the practice of visiting Rome for the purposes of study and the methodical exploration of ancient remains began to assume the rigorous aspect of a system. In the 15th century, in fact, with Cyriacus of Ancona's voyage to Greece, with Fra Giocondo's attempts at a systematic survey of the monuments and remains of Rome and of Italy, with the theoretic insistence on the idea of revival in the *Hypnerotomachia Poliphili* (*The Dream of Polyphilos*) by Fra Colonna (PL. 308) (one of the most pertinent texts on this question, in which the return to antiquity is conceived of as a transformation and renewal of the inner man, accompanied by all the rites of a real initiation), and with the immediate application of these experiences on the part of those artists, such as Donatello, Alberti, or Mantegna, who were most influenced by theoretical considerations — the study of classical antiquity emerges as a morally formative factor and a part of the culture and erudition of the time. The drawings of Giuliano da Sangallo or the pages of the unpublished treatise on *The Spectacles of Priscian* or a comparison of the writings of Alberti on architecture with those of Vitruvius may give the impression of a total identification, one so complete as to conceal, at least at first sight, the undeniably important elements of novelty contained in Renaissance art. The 15th century, then, saw the definite completion of the process described by Panofsky, in a celebrated phrase, as "the reunion of classical form and classical subject matter." Antiquity is thus reapprehended in its unity and in its entirety.

The sometimes excessive preoccupation of Renaissance artists with documentation and their enthusiastic use of the full range of classical ornamentation — which finds its way even into domestic furniture, gradually yielding to an exuberance not unworthy of late Gothic — clearly bespeak the presence of a sort of archaeological element in the Renaissance attitude. It was this aspect of Renaissance classicism which was seized on by the mannerists, by baroque artists, and by the moderns as the primary target of their criticisms, with their indirect accusations of antinaturalism; and one must admit that beneath the archaeological erudition of the 15th century there lay a liking for the display of skill, refined subtlety, and recondite associations. This aspect of the movement, however, should not make us overlook what is the decisive contribution of the Renaissance revival: the reconquest of a surer vision of the world, of a beauty founded on objective and universally valid laws (see PERSPECTIVE; PROPORTION), of a more concrete and human capacity for expression, of a decisive rejection of suggestion, image, abstraction. Nor should the attention paid by recent research to this archaeological fashion blind us to the fact that there is a moral and religious substratum to the Renaissance revival, connected with Augustinianism (see CLASSICISM).

For political reasons and because of its cultural traditions it was Italy, and in particular Florence, which took the lead in this process. In the Porta della Mandorla of the Cathedral of Florence (PL. 306), partially completed between 1391 and 1396, among decorative motifs presumably inspired by pilasters formerly in St. Peter's, Rome, appear the first representations of mythological figures, correctly delineated and interpreted; among these is that of Hercules, probably connected with the contemporary work *De laboribus Herculis* by Coluccio Salutati, begun between 1383 and 1391. In Florence, the progress of information on classical matters, acquired at firsthand in visits to Rome, can be followed as well as anywhere in the works of Ghiberti, where we have periods of documentary preoccupation (especially between 1416 and 1420) preceded and followed by periods of free reelaboration. Yet in some other artists the influence of antiquity is more drastic and more productive of new developments. Of classical derivation is the astonishing monumentality of the sculptures in the round by Nanni d'Antonio di Banco (cf. in particular the statues of the *Four Saints*

at Orsanmichele), an artist from whom even Donatello could learn in the art of modeling. Nanni's work reveals with particular clarity the epic and dramatic aspect assumed by the new sculpture in deliberate contrast to the "courtliness" of Gothic work.

To understand this contrast it is particularly important to bear in mind the philosophy of Brunelleschi, one of whose tasks was to complete the most important Gothic building in the city, the Cathedral. His work is connected not only with Roman architecture, whose structures and elements he freely reinterpreted and reelaborated, but with Tuscan Romanesque, especially S. Miniato and SS. Apostoli. The latter church, which at that time was believed to have been founded by Charlemagne, has in fact a distinctly courtly character, as can be seen by comparing it, for example, with the Cathedral of Viterbo, another building which is in some sense pre-Brunelleschian. The classicism here invoked is not the erudite, studied, formal kind but an imperial, or Roman, classicism, embodying a system of structural symbolism and parallel to the affirmation of political independence on the part of Florence, which had for some time upheld its own direct descent from Rome; and like this political movement it tended to create a historical or spatial world securely governed by laws and free from subjective associations. It was, above all, in the field of perspective — the system of organizing the visual surroundings according to universal and objective laws — that this political and moral program came into contact with the arts. Brunelleschi, Donatello, and Masaccio, the artists who created the Florentine and so the Italian Renaissance, were intimately connected with the cultural elite of the city. This concept of perspective, supported by consulting Vitruvius, served as a starting point for Alberti, who applied it in relation to the theater in his early years at the University of Bologna; his *Philodoxeus* is the first example of a dramatic composition in which not only the scene (the fixed and spatially determined piazza according to the interpretation then current of the stage used by Terence and Plautus) but the crux of the action are determined not by instincts but by law and by time (here actually personified). In Alberti, side by side with his literary experiences (among them Lucian, an abundant source of allegory), with his exploration of archaeological remains, so minute and accurate as to amount to a planned survey, and with his study of ancient literature on art, there exist a certain acceptance of Gothic and a moralistic interpretation of classicism. The last is conceived of as bringing back pre-Christian religious motifs within the orbit of Christianity, and also as encouraging a rationalistic renovation of the Church of Rome. For Alberti, in fact, "the reverence and honor due to God" are to be identified with justice.

Alberti's architecture did not meet with favor in Florence, always hostile to erudition in art and faithful to Brunelleschi. Later, Giuliano da Sangallo was to cling to this Florentine taste in S. Maria delle Carceri in Prato, but reverted to the antique in the Medici villa at Poggio a Caiano, which is neo-Hellenistic in its gracefulness (PL. 305).

Of great importance are the relations between Alberti and Pope Nicholas V. The replanning of the Vatican area after the papal jubilee of 1450 shows itself to be clearly inspired by Vitruvius and by the study of existing remains; nevertheless, the principles were new. For Alberti, an architect was one who, by means of certain and marvelous laws and rules, with his mind and his spirit transforms humanity from a barbarous to a civilized state; for Nicholas V, town planning was a means toward the building on earth of the heavenly Jerusalem, an instrument of persuasion and propaganda superior in its effect even to education. Thus Rome, which had at first remained outside the main stream of the Renaissance (whose first area of expansion had been the Po Valley, where, among other things, there had been a systematic revival of the equestrian monument from Donatello to Verrocchio), became at once intimately involved in the question of revival, though not without some religious controversy. The opinion of the majority tended to favor an "archaeological" reconstruction of the city and the collecting of ancient objects — a pursuit which often degenerated into a treasure hunt, the principal building contrac-

tors and sculptors being also collectors and antique dealers. This atmosphere was still prevalent early in the 16th century and explains the borrowings and imitations of Michelangelo. However, the great problem — that of the relationship between classicism and piety, components of that *docta religio* so much desired by the men of the Renaissance, in the name of which Alberti even went so far as to advocate the placing of maxims of philosophy in churches — was never really faced. Instead, in various buildings in Rome and, above all, in the Cathedral of Pienza, built at the instigation of Pius II, we find a revival of Gothic forms (notably the mystic use of light, the use of the hall church in which the aisles are as high as the nave, and verticalism), which are evidence not so much of the fact that there were foreign patrons, such as Cardinal d'Estouteville, as of the awakening of an anti-Renaissance tendency.

We have already alluded to the rigorous scholarship of Mantegna (PL. 307). This is the reflection of a scientific mentality, capable, on the one hand, of a remarkable receptivity toward the culture of Greece and yet, on the other, still imbued with some late Gothic features, such as the stress laid on the costliness of the artist's material and that expressionist tendency which was to be inherited by the Ferrarese school, together with those other facets of antiquity, astrology and symbolism. Another important manifestation of the idea of a revival is that represented by Botticelli and by the Medici circle in general. In Botticelli, antiquity frequently assumes the function of a poetic theme (PL. 307), a theme which has a singular and exceptional emotive content (even though there may be an underlying allegorical and political meaning); in Piero di Cosimo, more restless and isolated, classical mythology is interpreted in an esoteric guise with a certain amount of drama. Vasari, in his life of Botticelli, brings out well his participation in the religious crisis of the Renaissance; there seems in any case to have been a special connection between this crisis and the lyrical "classicism" we are discussing. This latter can be found side by side with the study of anatomy for artistic purposes, now placed on a scientific basis; and it also coexists with the Christian formalism of Signorelli, who developed to its limit the study of the rules of proportion governing the nude, Neoplatonically considered to be the most perfect of divine creations.

Unlike the "archaeological" tendency or the dynamic and anatomical interpretation of classical statuary, such as we find, for example, in Pollaiuolo, this "poetic" tendency (and the adjective is not casually used) does not aim at the precise delineation and assimilation of ancient culture but at the quality of allusion, at a generalized presentation of events in a highly allegorical and indefinite context so that they appear eternal and perennially repeatable. Due, perhaps, to the influence of Bembo, the clearest reflection of this evocation of antiquity is to be found in Venetian culture, particularly in the school of Giorgione. The theoretic motivation of this school derives from a rethinking of Pliny and Aristotle. Indeed, the very concept of "tonal painting" is based on Pliny's definition of tone as lying midway between light and shade and is thus opposed not only to Tuscan plasticism but also, indirectly, to that archaeological erudition which derived almost exclusively from the study of statues (a similar protest underlies the frequent use made of "grotesques" as a decorative motif). In Giorgione, particularly in *The Tempest* (which, according to a recent interpretation, represents the loves of Zeus and Io), the mythological element is concealed and recondite, and allusion to antiquity is limited to the presentation of a broken column and a series of arches (PL. 308). In painters of the school of Giorgione, the influence of antiquity is also evident in the frequent use of subjects taken from Ovid. Unfortunately, this happy moment was of short duration, even at Venice, a center soon enriched by the Grimani collections, now in the Museo Correr; and under the combined pressure of the craze for collecting, the taste of patrons, the collections of drawings, and Tuscan and Roman literature on art, the interest in Ovid gradually gave way to an "archaeological" tendency — though only in design, for in the use of color Venetian painting remained absolutely independent.

From the middle of the 15th century on, Rome, as we have seen, had been in the grip of a very powerful revival of classical themes, especially in sculpture and architecture. Some of the buildings, for example the *palazzo* of Cardinal Riario (now the Cancelleria), seem like reconstructions of ancient monuments and strike one almost as being pieces of stage scenery. In the workshops of Andrea Bregno and other Roman sculptors (about which unfortunately all too little is known), a careful study was made of ancient ornaments, allegories, and attributes (PL. 306). Bramante, on his arrival in Rome in 1499, was astonished at what he saw. Antonio da Sangallo's church of S. Biagio at Montepulciano (the extraordinary solemnity of which springs directly from the roughness and the clean outlines of the porous stone of which it is constructed) is perhaps the most imposing example of this form of classicism, the most rigorous in the whole history of art and one which has in time come to be identified with the Renaissance itself. The reminiscences of the Pantheon, of the Theater of Marcellus, and of the Colosseum (whose statues and columns had long been utilized in church porches, loggias, etc.) found their justification in the idea of the legitimate derivation of the Christian Church and of papal power from imperial Rome and in the belief in the sacred purpose of these monuments. The most explicit affirmation of these ideas is to be found in the plans for the new St. Peter's, at once church, temple, and mausoleum, to be built over the tomb of the apostle. At this time the ideas of Alberti and of Nicholas V still held sway, but now they were taken up with all the rigor of a fully developed archaeological culture, in which the very fact of the imitation of antiquity (considered truer than nature itself) was held to confer on a work of art esthetic qualities that were independent of the manner of imitation or the appropriateness of the work imitated. There was, in other words, a movement toward a style which was objective and in a certain sense abstract, and therefore in opposition to the naturalistic tendencies which had become widespread, partly through Flemish influence, at the end of the 15th century.

The mannerist movement was in violent reaction against this Roman classicism. There was undoubtedly a certain element of Gothic influence in the movement (the taste for sophistication, for preciousness, or ornament, for the fantastic), but no real revival of Gothic representational themes. On the other hand, there was a notable insistence on the elaboration of allegories and symbols, with even an occasional reference (theoretical, that is, but not figural) to hieroglyphics (see EMBLEMS).

Another Renaissance development was the renewed influence of Vitruvius, Frontinus, and others on the layout of gardens, on hydraulic works, on fountains, on mechanics (including the mechanical activities of Leonardo), and above all on the concept of the royal palace. The most complex example of palace organization, apart from the Vatican of Nicholas V and Bramante, was provided by the palace of the Gonzagas at Mantua, planned by Giulio Romano and his pupils and including, besides much else, museums, libraries, and theaters.

Across the Alps, the first artist to enter the world of Italian Humanistic erudition and "poetry" was Dürer. It has been remarked that, though he was on familiar terms with collectors of classical antiquity, Dürer did not draw his inspiration directly from classical models. Italian Quattrocento artists were the medium whereby he acquired his visual classical culture. Yet this mediation encouraged a mythical and lyrical interpretation of antiquity, in which the classical world is, as it were, seen from afar off, enveloped in an atmosphere of magic. In his turn, Jan Gossaert, also known as Jan Mabuse, described by Vasari as the first exponent of classicism in the Low Countries, derived his own rather cold form of classicism from Dürer. It was not until the spread of mannerism throughout Europe that the full range of images and allegories taken over from antiquity became familiar north of the Alps. However, what was now passed on was itself of mixed alloy, for, with many of the artists coming from the north of Italy, much prominence was given to such features as a love of detail, a concern for allegorical content, and a painstaking accuracy of allusion.

We must not rule out the possibility that artistic movements which seem completely autonomous, such as Flemish painting, were influenced in an analogous but entirely independent way by ancient literature on art. Over and above the more obvious similarities of imagery, the importance of Pliny, Vitruvius, and the rhetoricians should always be kept in mind. In Spain, for example, the influence of Vitruvius was already apparent in the 15th century in some imposing schemes for urban development using a rectangular plan. As for Jan van Eyck, before 1457 Bartolomeo Facio was speaking about the influence of Pliny on this artist's knowledge of colors. Perhaps also the presentation of the figure of the Virgin in some paintings, with her arm advanced towards the viewer, alludes to a famous trick of perspective of Apelles.

THE REFORMATION AND THE COUNTER REFORMATION. Although Dürer grasped the religious and emotional value of the "heroic" classicism of Michelangelo and appreciated the religious and cosmological implications of the rules of proportion applied to the human figure (PL. 309), whenever he drew or painted sacred subjects, he always used northern stylistic modes, those, that is, of the local, late Gothic tradition. Both the Protestant Reformation and the Catholic Counter Reformation, in fact, reacted extremely violently against classicism. The former displayed a general hostility to sacred images, condemning especially any tendency toward three-dimensionality, in the fear that this might encourage the transformation of these images into idols, and favored their reduction to a simple representation in outline, that is, to a symbol. The latter deliberately went back to the traditional religious iconography, which had been thrown into confusion by the caprices and personal whims of Renaissance artists. The most important representative of this trend was Gilio, whose work embodies a sort of mythical pre-Raphaelism. Fra Angelico was recognized as being the most inspired example of the painter of holiness; and the iconography of sacred subjects was strictly defined, with important help from secular scholarship, and its immutability enjoined by the Council of Trent as an injunction to respect in artistic reproductions the historical facts of Holy Scripture.

Ideas of reform of the arts had existed before Savonarola in the artistic environment of Michelangelo; and the *Dialogues* of Francisco de Hollanda, one of the most powerful instruments in the spread of Renaissance ideas in the Iberian peninsula, contain a passionate eulogy of Byzantine images. To find a real archaizing note in painting, however, we must look beyond even Domenichino to the work of Sassoferrato, who was linked spiritually, though not without some provincial ingenuousness, to those whom the 19th century called the "primitives," that is, to Quattrocento painters. In some of his best works, we find the colors placed side by side in simple juxtaposition, arranged in a sort of rhythmical progression, like a rondo, amid a general impression of simplicity and clarity.

A revival, not of a stylistic, but of a moral nature, is to be found in Caravaggio, who was closely connected with the Counter Reformation in northern Italy and in particular with the ideas of St. Charles Borromeo. He attempted a strictly historical interpretation of sacred events, one that is based entirely on the information provided by the Gospel and that rejected any imaginary element. His sacred subjects are immersed in a melancholy and an isolation that are truly Biblical. In Caravaggio, the revival is of ancient texts, not of ancient images — an attitude which finds a parallel in a characteristic feature of the Protestant Reformation.

The reading of classical treatises also accounts, according to Charles Sterling, for genre painting, so popular in the 17th century (see *STILL LIFE*).

BAROQUE AND THE 18TH CENTURY. What is usually known as 17th-century classicism comes only indirectly within the scope of this critical survey; for its most important feature is not archaeological erudition but a preoccupation with "decorum" and a tendency toward a moderate sort of naturalism in reaction against the stylistic complexities of mannerism. This demonstrates how many contrasting interpretations there can (and

must) be of the return to antiquity; it also illustrates how the same artistic tradition can at different moments of history provide material for a variety of trends, giving rise now to a rigorous insistence on structural cohesion, now to a heightened emotionalism (mannerism), now to a fairly strict form of naturalism, now to a pronounced idealism, and now to other innovating tendencies.

Even the short-lived revival of Michelangelism, initiated by the Carracci in the paintings for the ceiling of the Galleria Farnese, lacks the character of a real revival, being rather an assimilation, or an interpretative study, of a recent and essential model. (Indeed, Michelangelo himself, rejecting his immediate contemporaries, had turned back to Brunelleschi, Masaccio, and Donatello.) As for Raphaelism, it was destined to flourish in Europe for at least 200 years, revealing a desire for the idealization of physical beauty, based on the famous choice of beautiful models associated with the name of Zeuxis. In contrast to his ideal of perfection, the color of Rubens was invoked in the celebrated dissension between the *Poussinistes* and the *Rubénistes*, which still rages, conceptually, between those who favor the antique and those who favor the modern (see *MODERNISM*).

In 17th-century classicism as far as the interpretation of antiquity is concerned, while there are some cases of genuine purism, such as *The Flood* by Antonio Carracci, now in the Louvre, in which the influence of Raphael and that of Hellenistic statuary are united in the same work, the general tendency is lyrical, almost neo-Giorgionesque, and often moralizing and allegorical. The best representative of this tendency is Poussin, creator of a fabulous Arcadia (PL. 307) peopled by heroes of mythology or of Scripture who belong not to history but to some classical or Biblical golden age; its most romantic exponent is probably Guercino.

In sculpture and in architecture there was now a complete familiarity with ancient models, so much so that the contemporary artist drew on antique sources not merely for their iconography but for general concepts of style and decorative forms. A trend possessing a definite poetic quality of its own, however, was Palladianism, which had a particular success in England and later in North American architecture and in Russia and which is in a certain sense the architectural counterpart of Poussin's Arcadia. In Palladio himself there was undoubtedly some preoccupation with symbolism, associated with a theory of proportion inspired by antiquity and set out in the *De quinque corporibus regularibus* by Piero della Francesca and Pacioli's *De divina proportione*; and thus it is obvious that in origin Palladianism, in Italy, in Spain with Herrera's Escorial, and in England — where Inigo Jones, who introduced the style, was called the British Vitruvius — was not without its monumental and erudite aspects. But as time went by, there came more and more to the fore what was perhaps the essential element even in Palladio: a love of simplicity, a lyrical, rustic feeling, inspired perhaps by the quiet, sober life of Luigi Cornaro, whose ambition it was to conduct his affairs not from the city but from a villa.

In the 18th century, antiquity once more assumed a formative influence in European culture. This was due not so much to such events as the discovery of Herculaneum or the publication of views of the imperial palace at Split, the ancient Spalatum, as to the growth of a heroic, didactic, Plutarchian interpretation of classical history. In the decades preceding the French Revolution, we can follow the clearly differentiated phases of this renewed and changed interest (see *NEOCLASSIC STYLES*): the care taken by various governments to supervise the education of young artists sent to Rome, the renewed coincidence of literary and artistic themes, the attention paid by philosophers and writers on artistic theory to the political and moral significance of art. This is the background against which we must set Winckelmann's educational and esthetic teachings.

This return to antiquity possessed a political significance, a fact which sharply differentiates it from the learned yet fantastic reconstructions of ancient monuments indulged in by the Piranesis and from the widespread "romantic" interest

in ruins; deriving from a desire for historical exoticism, these activities and interests were little concerned with what civilization the ruins represented. Nothing gives us a better idea of the political aspect of this movement than the speeches made by David in the French Constituent Assembly. Here is an extract from one delivered on 25 Brumaire (Nov. 15), 1793: "Citizens, the Committee of Public Instruction has considered the various aspects in which the arts may be expected to advance the progress of the human spirit and to diffuse and transmit to posterity the outstanding examples of the achievement of a great people, who, guided by reason and philosophy, have reestablished the reign of liberty, equality, and law on this earth. The arts can indeed make a powerful contribution to education. Tyrants, recoiling from the very images of virtue, for too long have held thought itself in fetters, encouraging license in morals and stifling genius." That these ideas were widely held is shown by the fact that in January, 1785, a Roman periodical, the *Memorie per le belle arti*, stated: "Paintings and statues are now no longer regarded as a passing delight to the eye; the Philosopher seeks in them truth and passion, and demands that they speak to the reason and the heart. We need not fear lest the mode of the times lead us astray, for those ideas that we now adopt, and to which we owe the interest taken by men of learning in the fine arts, are the very same which once ruled over Greece, that prolific mother of the most sublime artists." We might add that they were also accepted by the papacy.

Neoclassicism, at least in its most intense phase, is sharply distinct from the classicism of the 17th and 18th centuries, though it is there that it has its roots. Compare, for example, the scenes of Roman history painted by Jacques Louis David with the composition of Poussin (PL. 307). In the latter, there is an indeterminate air, a sort of universalization, surrounding the depiction of historical events, a predominance of the landscape (that is, of the surroundings) over the action, and, at least in his best work, a lyrical pathos that contrast strongly with the art of David, who places man at the center of the drama, is always seeking the heroic element, and endows his images with a statuesque, abstract fixity, the better to eternalize the emotional force of the work in stable and definite forms.

David was the only artist fully to represent the artistic theories of neoclassicism, which, oscillating between the several poles of 18th-century exoticism, the taste for whimsy, academic restraint, and romantic emotion and rhetoric, contained within itself many contradictory features. In household furniture, it achieved more completely perhaps than any other style a sense of complete intimacy and isolation from city life, bringing to pass a dream of Arcadia in family life. In architecture, especially in France and Germany, it experimented with solemn Doric forms (PL. 305). In sculpture, where the restraining hand of reality is strong, we have, particularly in Thorwaldsen, the first real flourishing, after several sporadic appearances in the elegant productions of the rococo period, of an aspiration toward a Hellenism intended to be in harmony with the spirit of Greek poetry. Even the whiteness of the marble itself seems to have been considered as "Greek taste." See also AMERICAS: ART SINCE COLUMBUS.

Side by side with neoclassicism and often connected with it exists a most important current derived directly or indirectly from Plato's *Republic*, that of the Utopians. As a matter of fact, this current can be found in every period of Western civilization and is one of the most fruitful, at least in a typological sense, in the development of architecture. After flourishing in the Renaissance, when its supporters included Filarete and Leonardo, the current became stronger in the age of reason. Some of its supporters were men of letters; for example, Fénelon, who in the *Voyage de Télémaque* advocated a simple yet graceful type of architecture which would permit a cheerful and comfortable house suitable for a large family to be built in a limited space, but nevertheless to have completely separate rooms and to be healthy in its setting, easy to keep clean and tidy, and economical to maintain. Others were sociologists, like Fourier, who proposed the building of great blocks (phal-

antries) housing 1,600 people and comprising common rooms, libraries, banks, temples, observatories, workshops, theaters, schools, shelters, dwelling places, covered passageways, central heating, and centralized services. Others were actual architects, like C. N. Ledoux, who was responsible for the design of the spherical house of the Gardes Agricoles of Maupertuis, which recalls the Platonic world of ideas in its insistence on the stereometric form (PL. 308).

A survey of the Age of Enlightenment would not be complete without a reference to two other trends, anticlassical in tendency but both derived from ancient theorizing on art. The most important of these is the concept of the "sublime," that is, of an artistic emotion deriving not from pleasure but from grief, fear, and amazement. The source of this concept, later to become an essential weapon in the attack on the classical and Renaissance concept of beauty, is the short rhetorical treatise going under the name of Longinus. In the light of such ideas, it was possible for artists such as Blake (PL. 309) and Fuseli to undertake a new critical appraisal of Michelangelo, and thus of mannerism, and so to rediscover this movement's profound idealistic and visionary character.

The other trend is that of the "picturesque" (q.v.), which, together with the "caprice" (see FANTASY) of rococo art, can also trace its ancestry back to ancient discussions on art, such as Vitruvius's famous attack on "grotesques."

ROMANTICISM. Romanticism, too, despite its "modernistic" outbursts, also had its return to the past. Just as David and Canova (PL. 306) drew their inspiration from ancient sculpture, so in the case of Delacroix one notes a relationship to Titian and Rubens, particularly in his late work. In Ingres' case there was an even closer relationship to the art of Raphael. The romantics were indeed sensitive to the suggestive power of the Middle Ages; but they felt it as the poetry of ruins (cf. Victor Hugo's description of Reims Cathedral) — in this resembling some 17th-century Dutch landscape painters, with whom in any case they have some connections — or else as an aspiration toward the infinite (on this, cf. Goethe's pages on Strasbourg Cathedral); and though the period provided them with subject matter, they did not derive from it any stylistic inspiration. As regards form, they are closer, at least in the most striking cases, to Venetian painting (Titian, Tintoretto) and to baroque (Rubens, Velázquez, Caravaggio, and also El Greco). The latter movement, to which the romantics felt particularly akin — the mannerism of El Greco being at that time considered a manifestation of the baroque spirit — was characterized by a sensual, grandiose rendering of the subject and by a certain distortion of the image, ascribed to the emotional urgency of the artist's inspiration. Delacroix in particular derived from this contact a stylistic form very well suited to his morbid and gloomy vision of life — an instance, from an epoch close to our own, of a critical misapprehension which yet produced for the individual a satisfactory solution of his problems. In Delacroix we also see the desire to find a less sophisticated sort of antiquity; hence the "discovery" of Morocco. In his diary for Apr. 28, 1832, he says that the Arabs "are in innumerable ways closer to nature: their clothes, the shape of their shoes. Thus beauty is associated with everything they do." A similar sort of idea explains the vogue of Spain and Italy in romantic culture.

If the romantics' return to the Middle Ages was largely evocative, there were also parallel movements, some of a religious or mystical character, such as purism, the Nazarenes, and pre-Raphaelitism, in which the desire to achieve greater spirituality brought about a new and profound interest in artists of the 15th century — Fra Angelico, Botticelli, and Fra Filippo Lippi — who had until then usually been considered as only of local importance or merely as stages in a supposed artistic development. This attitude was widespread. Ingres, for example, declared of a fresco at Assisi: "Raphael himself never achieved such an expression." Baudelaire ironically remarked that Overbeck studied the "beauty of the past the better to be able to teach religion." Gradually there came about a complete reversal in the traditional view of the history

of art. In 1762, Mengs could still write: "Those who came before Raphael, Correggio, and Titian strove only after pure imitation; thus there was at that time no real taste, and a picture was in a certain sense a chaos." But in the 19th century Paillet de Montabert gives a very different picture: "Since the revival of interest in the sciences and in letters, and beginning from the age of Leo X, the moderns have been too dazed and obsessed by the great mass of fresh and ever-increasing knowledge. By about the 16th century painting, though it had made great strides as far as imitation and manner of execution were concerned, had in practice lost in dignity, candor, and beauty." Thus there arose an extremely modern attitude, a movement of condemnation, at first ideological and then stylistic and formal, directed against the Renaissance. The consequences were enormous: a mistrust of academic instruction, itself of Renaissance origin; the abandonment of the by now traditional canons of perspective; the gradual disassociation of the arts from the great political and religious ideologies of church and state. Subsequently, the search after style tended to be carried on in solitude; often the work of art ceased to be intended for any particular person or place and, indeed, was not even offered for sale for some considerable time.

We must admit, moreover, that the first admirers of the primitives possessed a historical sensitivity of a high order, appreciating, for example, the religious uneasiness of the Michelangelo of the mannerist period, for whom Blake and Overbeck, among others, revealed a warm and sympathetic understanding. A contributory factor in the entry of the pre-Renaissance artistic world into history and criticism, the progress of which can be followed in the rapid growth of public and private art collections, was provided by the immense collections assembled at the Louvre by Napoleon with the idea of forming a universal museum (see MUSEUMS AND COLLECTIONS); in the same way, in another field, his military campaigns and above all the Egyptian expedition had very important consequences for town planning, where schemes embodying the use of perspective views and based on a rectangular plan became common early in the 19th century.

A further result of this interest in the primitives was that greater importance was attached to the arrangement of forms, to the rhythm and power of suggestion of individual colors, and to the relation of elements than to the thematic content of works of art or to the preservation of traditional forms and subjects. It was in any case difficult to recapture the original religious significance of works produced so long ago. In much the same way, the study of Gothic architecture, which in Viollet-le-Duc consisted largely of an admiring analysis of medieval construction, was associated with important technical advances, such as the use of iron and of reinforced concrete. This aspect of the Gothic revival is clearly quite distinct from decorative Neo-Gothic (see NEO-GOTHIC STYLES). Traces of this attitude appear even in recent buildings (PL. 305), while a sort of historical inspiration, a harking back to medieval communities, gave rise, especially in England, to the first "garden cities," which were to prove a decisive turning point in city planning.

In all these movements, we can see a general tendency to find an antidote to history in history itself and thereby to obtain a means of escape from a suffocating routine. In Morris, for example, the return to the Middle Ages developed into an attempt to revivify the techniques of craftsmanship. Very soon, however, a preoccupation with style began to predominate over the original interest in moral analogies. Manet, for example, chose Goya and Franz Hals as his masters, not, as has been maintained, for political reasons but because of their technique. In the period of impressionism, the popularity of Japanese prints coincided with a liking for pure, flat grades of color, while the significance of Gauguin's escape from reality was purely formal. So, too, Cézanne, in invoking as models the pictures in museums or praising Ribera and Zurbarán, was seeking to express his conviction that painting needed a structural rigor of design and color sufficient to arouse in the spectator a feeling of weight and of sensuality analogous to that of 17th-century naturalism, though achieved through a diametrically opposite technique.

At the same time, however, various attempts were made to return to the tradition of the Renaissance and to baroque classicism, and these were accompanied by schemes to revive the painting of frescoes or to carry out vast compositions on historical and allegorical subjects. Maurice Denis and Puvion de Chavannes should be mentioned in this connection. The latter, whose contribution to modern art should not be underestimated, was the apostle of a "new Humanism," the basis of which, as Brizio has pointed out, was either an archaic paganism or a classicizing Christianity. In 1890, in the review *Art et Critique*, Denis's pen provided a manifesto against naturalism and impressionism, representing the views of a "neo-traditionalist" group which, for spiritual reasons analogous to those of the purist but with a much more profound understanding of history, drew its inspiration from deeply religious civilizations, such as that of Byzantium.

MODERN ART. It is clear that there must be an unconscious inner reason behind the ever-increasing frequency and the ever-widening scope of these "revivals" (see PRIMITIVISM). In addition to the general historical tendency of the 19th and 20th centuries (even such objectionable styles as that known in architecture as "eclectic" are mixtures of "revivals"), beneath the surface of our culture there lies a serious religious and social crisis. The ever-increasing attention devoted to primitive peoples is a clear indication of our need to go back to the origins of civilization itself, to rediscover essential, primordial laws. It is illuminating to compare stylistic phenomena drawn from different arts: the enthusiasm, beginning in 1904, of the Parisian painters Vlaminck, Matisse, Derain, and Picasso for Negro sculpture matches that of sculptors for totem poles or of dancers for masks, and all are accompanied by the spread into Europe of Afro-American music, in which there is unquestionably a much more genuine and exotic feeling of drama and immediacy than that which the romantics so much admired in European folklore.

Even nonfigurative artists manifest a great interest in the history of art or, more accurately, in its prehistory. Miró, for example, has gone back to the schematic art of the Neolithic age; Picasso, in certain moments of his development (PL. 306), to Paleolithic art; Braque, in his sculpture, to Greek art of the archaic period — an example followed by several other sculptors. Others have gone to the Middle Ages for their inspiration. But probably stronger than any of these is the influence of applied arts of a popular and ethnographic nature, usually extra-European (as in Klee). Where one cannot speak of direct iconographical derivation, the connection is still very close, not only in technique (cf., for example, the experiments with the use of more than one material in the same composition) but also in the willingness to allow the structure of the work, the method of execution, and the quality of the material to be clearly apparent to the eye; in the way in which the finished work, especially sculpture, is considered in its isolation as a magic object (as Rilke had urged); and in the presence of symbolic elements, frequently of sexual origin. The foregoing applies also to the field of industrial design and to the manufacture of utensils, where the modern world strives after that perfect suitability of the implement to its task so wonderfully achieved by primitive peoples.

There are also examples of classical revivals. However, it is Greece that has exercised the greatest fascination; generally speaking, the Roman world has had the misfortune to be championed in times of dictatorship and totalitarianism, with results which are in general of poor quality and ignobly materialistic. Certain artists opposed these tendencies vigorously. Abstract art, in this connection, became a kind of symbol of political independence. Even the most committed artists, however, have felt the poetic value of the classical world: in the fields of prints and of pottery especially, Matisse, Braque, and Picasso have provided a modern and lyrical reinterpretation of the classical spirit. Certain delicate transitions in classical art and its possession of a certain "preromantic" quality have been brought out by Arturo Martini, one of the later figurative artists. Frequently, the transition from linear arabesque, mostly

derived from pottery, to abstract forms is carried out with an instinctive ease.

Ancient literature on art, also, has by no means lost its fascination. The post-cubists' search for geometric structure has led to a revaluation of the golden section and of the harmonies of proportion, with explicit references to Vitruvius and Alberti. In architecture, this study of proportion, which in Le Corbusier, in particular, in a way reminiscent of the Renaissance, assumes the function of a moral law and is considered a means for bringing back "order" to society, remains perhaps the distinctive quality of contemporary building, in contrast both to romanticism and to baroque. (The latter, incidentally, remains the object of much attention from organic and antirationalistic trends, which find there a greater appreciation of emotional elements.) Moreover, by comparing Le Corbusier's human "module" with that of Vitruvius or with those which can be deduced from classical and Renaissance architecture, we have an almost mathematically exact illustration of how successive civilizations can differ even when they are assiduously and reiteratedly pursuing the same end — here geometric precision. And this is but another illustration of the fact that the return to antiquity can be a method of exploring artistic possibilities and, above all, of self-criticism.

Eugenio BATTISTI

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Illustrations: PLS. 298-309.

ANTONELLO DA MESSINA. Italian painter; born in Messina about 1430 of Giovanni d'Antonio, a humble marble worker, and Garita (Margherita?) his wife; died there between Feb. 14 and 25, 1479. The year of his birth, commonly accepted, is based on Vasari's assumption that he died at the age of 49. His apprenticeship to the Neapolitan Colantonio, noted by Summonte (see below), must have occurred about mid-century. At any rate, in 1456 we find him in Messina; he had a shop of his own, for he hired one Paolo di Ciacio as apprentice, and he appears to have had connections with various centers in Calabria. A reference to his return home, and therefore indirectly to a voyage, appears in a document of Jan. 15, 1460, when his father, Giovanni d'Antonio, rented a brigantine to reach Amantea to bring the artist with all his family (his wife Giovanna, his children, his brother Giordano, also a painter, his sister, his parents-in-law, as well as his servants and assistants) back to Messina. From 1460 to 1465 he is constantly documented as being in Messina. From 1465 to 1473, except for the inscriptions on several paintings, we have no documents proving his presence there. It is probable that during this time Antonello undertook the voyages to which Vasari's biography vaguely refers and that he may also have been in Rome, where he could have become acquainted with the works of Piero della Francesca. In 1473 and 1474 Antonello was certainly in Messina, where he executed some of his most famous works. In 1475 he was in Venice, and documents indicate that he was there at least until March, 1476. It is not to be excluded that he went briefly to Milan. Galeazzo Maria Sforza, in fact, sent for him to replace Zanetto Bugatti, his portrait painter, who had just died. At any rate, by September of the same year he had returned to Messina and worked intensely until Feb. 14, 1479, when, because of his failing health, he dictated his will. Another document of the 25th of the same month tells us that he was no longer alive.

WORKS. a. *Signed or documented works:* *Salvator Mundi* (PL. 313), London, Nat. Gall. (with the date 1465). - *Ecce Homo*, New York, Met. Mus. (originally, as we know from Auria's mention of it, dated 1470). - *Ecce Homo*, Genoa, Gall. Spinola. - *Ecce Homo*, Piacenza, Collegio Alberoni (with the date 1473). - *Polyptych* (PL. 315), formerly in the Monastery of S. Gregorio, Messina, Mus. Naz. (with the date 1473): in the center the Madonna and Child crowned by Angels, at the sides SS. Gregory and Benedict, in the upper part the Archangel Gabriel and the Virgin Annunciate (the central panel is missing). -

Ecce Homo, Vienna, private coll. (with the date 1474). - *Portrait of a Man*, Pavia, Gall. Malaspina. - *Portrait of a Man*, Berlin, Staat. Mus. (with the date 1474). - *Annunciation*, Syracuse, Mus. di Palazzo Bellomo (this work, which lacks the crowning piece and the predella, is neither signed nor dated, but we know from documents that it was executed in the latter half of 1474). - *Crucifixion* (PL. 317), Antwerp, Mus. (with the date 1475). - *Altarpiece of S. Cassiano* (panel fragments), formerly in the church of the same name in Venice (PL. 318), Vienna, Kunsthist. Mus.: Madonna and Child with the fragmentary figures of St. Nicholas of Bari and St. Anastasia (?) and of St. Dominic and St. Ursula (?). The work is neither signed nor dated, but it is known from documents that it was executed in 1475 and in the early part of 1476). - *Portrait of a Man*, called *Il Condottiere*, Paris, Louvre (with the date 1475). - *Portrait of a Man*, Turin, Mus. Civ. (with the date 1476). - *Crucifixion* (PL. 312), London, Nat. Gall. (the reading of the date is contested because of the erasure of the last figure; some read 1475, others 1477). - *Portrait of a Man*, Berlin, Staat. Mus. (with the date 1478).

b. *Attributed works:* *Madonna and Child*, Salting Bequest, London, Nat. Gall. (Longhi, Bottari). - *Crucifixion* (PL. 314), Sibiu (formerly Hermannstadt), Romania, Mus. (Lauts). - *St. Jerome in His Study* (PL. 311), London, Nat. Gall. (mentioned by Michiel). - *St. Jerome Penitent* (PL. 314), Reggio Calabria, Mus. - *Visi of the Three Angels to Abraham* (PL. 313), Reggio Calabria, Mus. (L. Venturi). - *Portrait of a Man* (PL. 321), Cefalù, Fondazione Mandraliaca (A. Venturi). - *St. Jerome, St. Augustine, St. Gregory*, Palermo, Gall. Naz. (Salinas, Vigni). - *Virgin Annunciate* (PL. 313), Munich, Alte Pinakothek (Frizzoni). - *Madonna and Child*, Washington, Nat. Gall., Mellon Coll. (Berenson). - *Virgin Annunciate* (PL. 310), Palermo, Gall. Naz. (Brunelli). - *Portrait of a Man*, New York, Met. Mus., Altman Coll. (A. Venturi, Berenson). - *Portrait of a Man* (PL. 320), Philadelphia, Mus. of Art, Johnson Coll. (Perkins). - *Self-portrait* (?), London, Nat. Gall. - *Pietà* (PL. 319), Venice, Mus. Correr (Frizzoni). - *Portrait of a Man*, perhaps Michele Vianello, Rome, Gall. Borghese (Cavalcaselle). - *St. Sebastian* (PL. 316), Dresden, Gemäldegalerie.

The history of the criticism and the reconstruction of the *œuvre* of Antonello up until 1952 has been systematically treated in the monograph of S. Bottari, *Antonello da Messina*, 1953. The most important facts will be reviewed below, with particular reference to the more recent publications. An analysis of the previous literature and related problems is available in the "Commentary to the Life of Antonello" written by the learned Dominican V. Marchesi for Le Monnier's edition of the *Lives* of Vasari (1848). Research with a more modern approach began with the works of G. B. Cavalcaselle (1871 and 1890) and B. Berenson (1895 and 1955), in which the basic problems concerning the origin and development of Antonello's painting are posed: the relation of Antonello to Flemish painting and his relation to Venetian painting. At this point the art of Antonello ceased to be a local problem confined to one region, archival material came under more careful scrutiny, and the possibility of enlarging Antonello's known *œuvre* with hitherto unrecognized or lost works was more seriously considered. Fundamental discoveries in the archives were made by Beltrami, La Corte Cailler, and especially by Di Marzo, and important discoveries were made among the paintings themselves. Perkins is responsible for the attribution (1905) of the Johnson *Portrait* (PL. 320); L. Venturi (1906 and 1908) published the Palazzolo Acreide *Annunciation*, one of the small panels in Reggio Calabria, and identified the *Ecce Homo* now in the Metropolitan Museum in New York with the one cited by Auria and mentioned by Cavalcaselle in his notes. Brunelli (1907) proved that the *Virgin Annunciate* (PL. 310) in Palermo, rather than the copy in Venice, was the original. Berenson (1913 and 1917) was responsible for the attribution of the Benson *Madonna* and the identification of the central part of the *Altarpiece of S. Cassiano*. Wilde (1929) recognized the other two fragments of the altarpiece and made a graphic reconstruction of it that is much more acceptable than the attempts of either Mather or Berenson. Discoveries were also made by many others, among whom we may mention Frizzoni in particular.

The study of new documents also permitted the first sound, systematic arrangement of Antonello's life and works. As a result there appeared the first monographs on the artist: those of D'Amico (1905), of L. Venturi (1907), and of N. Scalia (1914). The last, however, is rather confused and uncertain.

An important turning point in the literature on Antonello is the 1914 article by R. Longhi, an article whose conclusions concerning the significance of the work of Antonello were quickly accepted, evaluated, and disseminated by A. Venturi (1915 and 1923).

The subsequent studies do no more than amplify and give historical basis to Longhi's fundamental discovery concerning the relationship between the style of Antonello and that of Piero della Francesca. On the basis of this discovery an attempt has been made to clarify the origins of the painting of Antonello, as well as his function in the development of Venetian painting (principally in relation to Giovanni Bellini). The studies of Bottari, recapitulated in his monograph of 1939, are accordingly oriented in this direction. Of a wider scope is the monograph of J. Lauts (1933 and 1940), in which there is also a minute examination of the research on the works themselves and a more precise explanation of the original sources of Antonello's paintings. Among these early works the *Crucifixion of Sibiù* (PL. 314), which was adequately reproduced and commented on for the first time, is of cardinal importance. Lauts also carefully examined the reflection of the *Altarpiece of S. Cassiano* (PL. 318) in Venetian painting.

The following studies hinge on these two points: the search for the Flemish sources, which was given a new impetus by Lauts's study, and the definition of Antonello's contribution to Venetian painting. The most important writings on the first problem (besides an essay of L. Venturi in 1908, in which for the first time relationships are proposed between the *Aix Annunciation* and Antonello's *Annunciation* in Syracuse) are those of G. Fiocco (1950), of F. Bologna (1950), of S. Bottari (1951), and of G. Bazin (1953). Concerning the second problem, the principal work is that of L. Coletti (1949). A summary of these problems may be found in Vigni's little book (1953) and in a more extensive treatment in the previously mentioned volume of Bottari (1953). The exhibition in Messina in 1953 added to the list of Antonello's works the three panels in the Museum in Palermo, which up to that time had been unrecognizable because of bad restorations (see G. Vigni, 1952), and brought together several works either cleaned or, at least, with repainting removed (see C. Brandi, 1942, and the report of G. Vigni and G. Carandente, 1953). However, it cannot be said that the exhibition actually served to clarify the more problematic aspects of Antonello's painting. Nevertheless, worthy of mention is the "Frammento siciliano" of R. Longhi (1953), which reconsiders the Antonello question; among various attributions he suggests quite reasonably that a rare page in the R. Lehman Collection in New York is conceivably related to the *Crucifixion of Sibiù* (PL. 314). The volume of S. Bottari (1955) contains an analysis of the studies on Antonello, enriched by the experience of the exhibition, and a series of color reproductions, mostly executed for the exhibition.

In tracing the course of studies related to the personality and works of Antonello, we begin to understand how the criticism of his art developed. We find Antonello entering the history of art through the great door of Flemish painting; in the older histories he was studied chiefly for technique and theory, because the diffusion of oil painting in Italy absorbed the interest of the earlier scholars and Vasari had linked Antonello's name with this preeminently Flemish medium. The technical aspects, therefore, took precedence over the more strictly artistic problems of Antonello's work, although one of its most essential components was thereby characterized and understood. Cavalcaselle's position in this sense is a good example. Thus, a voyage to Flanders became one of the required elements in any history of Antonello. But when, on the basis of the documents found in the archives of Messina, it became clear that Antonello could not have made that precocious voyage, an attempt was made to find a local explanation for the Flemish character of his painting, which was especially strong in his early production. This was done by taking cognizance of all possible aspects of Sicilian art, going at times to unreasonable extremes. The impossibility of explaining so complex a phenomenon, a phenomenon really of European scope, by such modest facts, and scarcely persuasive ones at that, caused the studies

on Antonello to founder, and the personality of the artist acquired the ambiguity of an enigma.

The impasse was overcome by the fresh approach of R. Longhi, conditioned by a postimpressionist and cubist esthetic, with the consequent alertness to purely formal values. "Perspective synthesis of form and color": this was the formula devised by Longhi to define Antonello's closed and rigid rhythms and his extraordinary ability to transfigure reality or to give an objective statement of reality in changeless monumental forms. This sense of deliberate structure led Longhi to conclude that Antonello's art was consequent upon that of Piero della Francesca. His artistic personality could, thus, be seen as an active and determinant force entering the stream of European culture as a contributing factor in the formation of the grand style of the Venetian colorists, which was ultimately to lead to the painting of today.

Longhi's formula, as we have already remarked, was favorably received. In fact, one might say that because of it the work of Antonello, more clearly understood in its true character, returned to the culture of the Renaissance and was introduced into one of the most important stages of its course. But that formula ignored or did not satisfactorily explain some of the problems to which it had given rise. First among these was the riddle of the origins of Antonello; in other words, it was necessary to establish what precisely was his connection with Flemish painting. L. Venturi had remarked that Antonello had accomplished the synthesis of northern with southern painting in the Renaissance.

A decisive contribution came from the integral publication, annotated by Nicolini (1925), of the letter concerning the development of art in Naples sent to Michiel by Summonte. Through it the personality of Colantonio took on some clarity, in contrast to the confused accounts of De Dominici, and it gave a sound basis to the story of Antonello's apprenticeship to the Neapolitan painter. From the work of Colantonio it was easy to pass into Flemish and Burgundian painting, considering also the complex situation of the figurative arts at mid-century in Naples (that is, at the time of René of Anjou and of Alfonso I of Aragon); the critical reconstruction of the works of Colantonio, however, was not a simple task, and it was only recently achieved by Fiocco (1950), Bologna (1950), and Longhi (1955).

The problem became clearer with the establishment of contact between the work of Petrus Christus, the direct heir of the Van Eycks, and Antonello (Friedländer, Bottari, Bazin, and others). Also highly significant (cf. Wittgens' research) is the information revealed by Malaguzzi Valeri that the two artists were both present, and in the same status, on the payroll (*provisionati*) of the ducal household of Galeazzo Maria Sforza in 1456. This contact between the two painters accounts for such Antonellos as the *Crucifixion of Sibiù* (PL. 314), the two small panels from Reggio Calabria, the St. Jerome in London (PL. 311), and (not to mention others directly or indirectly known) the three later panels in the Gallery in Palermo, once part of a single polyptych.

The other problem that became vital as a result of Longhi's article was that of the relation of Antonello to Giovanni Bellini at a crucial time, not only for Bellini himself, but for the whole development of Venetian painting. The *Altarpiece of S. Cassiano* (PL. 318), rescued for the scholarly world principally through the research of Berenson and Wilde, might be said to have been the starting point of the revitalized painting of Giovanni Bellini (his great altarpieces had their stimulus and motivation here) and therefore the basis of the refreshed and more lively orientation of Venetian painting. The work of Antonello, in other words, would have had a double effect in Venice: on the one hand it would have communicated to the most vital painter there the stimulating experience of Piero; on the other, it would have encouraged Giovanni Bellini to overcome the dry, linear inheritance of Mantegna, and therefore to invigorate his taste for color through the exciting and new experience of Flemish art. However, the *Altarpiece of S. Cassiano* was neither the first nor the last work executed by Antonello in Venice. It may be assumed that he made his debut there with the very Flemish *Crucifixion* now in Ant-

werp (PL. 317), a small yet monumental work in which he appears to have set aside the Piero della Francesca phase that had reached its highest point in the *Polyptych of St. Gregory* of 1473 (PL. 315). (This date is quite close to that of the painting from the parish church of Cerveteri by Lorenzo da Viterbo, now in the Palazzo Barberini, Rome, which presents similarities suggesting that both works derive from a lost altarpiece by Piero). Perhaps Antonello deliberately chose to make his appearance in Venice under his most Flemish aspect, but, in any case, after 1473, even though the impact of Piero della Francesca was not lost, it subsided as he resumed the Flemish motifs which began to reappear in the *Annunciation* of Syracuse of 1474, and later the *Antwerp Crucifixion* (PL. 317). Therefore we must conclude, as Coletti does, that Bellini did not acquire his knowledge of Piero from Antonello; on the contrary, Antonello was turned back to Piero by the modernity of Bellini's work and produced, as a result, such monumental works as the Dresden *St. Sebastian* (PL. 316) and the *Altarpiece of S. Cassiano*. The confused reports in Vasari and the anecdote of Ridolfi, which tells of Bellini's visit to Antonello's studio in disguise in order to learn the secret of oil painting, both confirm that it was Antonello's color that was influential in Venice and not his transmission of certain aspects of Piero's art.

In short, the development of Antonello's art and its poetical character are inextricably tied up with some of the most important happenings in the figurative arts around the middle of the century. The two facts that assume, at least initially, a definite significance are his apprenticeship in the Neapolitan studio of Colantonio, recorded by the historian Pietro Summonte; and the contact with Petrus Christus.

With the name of Colantonio the mind conjures up that complex of Burgundian and Provençal, Iberian and French elements which characterize such a work (to ignore even more questionable attributions) as the *Madonna and Child* from the Salting Collection in the National Gallery in London. One may reject the attribution of this painting to Antonello, but it does have reference to him and suggests what may have been the character of his Neapolitan period.

The understanding of his contact with Petrus Christus is much simpler. The *Crucifixion* of Sibiu (PL. 314) is an excellent example, as has been suggested. The fact that it is based on a Van Eyck model (and is therefore comparable to many other Flemish panels of the same derivation) does not exclude the mediation of Petrus Christus, for it calls him to mind immediately, not only in the naturalism of spatial effects, but also in certain figures, such as the typical one on the left leaning against the tree from which one of the condemned thieves hangs. And along with the *Crucifixion* of Sibiu, no less significant are such works as the two little panels in Reggio Calabria (*The Three Angels*, PL. 313, and *St. Jerome*, PL. 314), the *St. Jerome* in the National Gallery, London (PL. 311), and, at least in its easily imaginable first stages, the *Salvator Mundi* (PL. 313), also in London.

This last painting bears the date 1465, when it presumably left the studio in its modified form. From 1465 to 1473, year of the *Polyptych of St. Gregory* in Messina (PL. 315), the only surely datable work is the *Ecce Homo* in the Metropolitan Museum in New York, executed in 1470 (the date, now partly erased, is known from older descriptions of it), and it still echoes, with a more pathetic tone but a more monumental effect, the prototype of Petrus Christus. It should not be thought that the artist was idle for so many years or that it is incorrect to place certain extant works within this period. First among them is the small *Portrait* in Cefalù (PL. 321), certainly the oldest of the memorable gallery which made the name of Antonello famous, a portrait rather different from the others in the incisive and analytical modeling based on prototypes of the Franco-Flemish tradition. Following it — already different in the closed formal arrangement of the perspective which locks them solemnly in space — are the three busts of saints (Gregory, Jerome, Augustine) in the Gallery in Palermo. Associated with them is the *Virgin Annunciate* in Munich (PL. 313), dated earlier than had been previously thought and consequently a precursor of the more severe and touching version

in Palermo (PL. 310). These works are characterized by a highly formal quality, whereby the lines of the figures are molded and regularized, assuming a crystalline precision, so that the Flemish love for detail is organized in a framework of monumental feeling. Another fundamental stage in Antonello's development is documented in the *Salvator Mundi* in London (PL. 313), which, before the final version, must not have been very different from the *Christ Crowned with Thorns* of Petrus Christus. The significance of the painting was, in fact, changed when Antonello, after putting it aside for a while, lowered the neckline of the robe and changed the hand, which originally was close to the chest, as may clearly be seen beneath the subsequent alteration. With these modifications the work came to acquire a completely new significance, distinctly reminiscent of Piero della Francesca: the hand comes through the picture plane and, in fact, gives the figure a volumetric rhythm which it previously lacked; and — as Longhi has noted — the perspective device spiritually magnifies the subject in a structural way reminiscent of the works of Piero.

The painting, however, in which the above-mentioned experiments seem forced to an extreme degree of completeness and refinement is the Benson *Madonna* in Washington, which is distinguished by a calm, three-dimensional clarity.

Opposing the later dating proposed by Berenson, Longhi links the Benson *Madonna* to Antonello's early Sicilian activity, pointing out "the southern type of Mary . . . in her regional character . . . much more pronounced than in the *Madonna* of *S. Cassiano*" (PL. 318) and the "stylistic hardness." These arguments are even more valid for the *Virgin Annunciate* in Palermo (PL. 310), which because of this "hardness" alone (the southern physiognomy is self-evident) was described by Brandi as "a superb pyramid of hard stones." A comparison of the hands indicates that it is a further development of the experiments carried out in the *Salvator Mundi* (PL. 313). The figure is blocked within the perspective arrangement; the lectern is slanted off center to receive the full shock of the light, which by its intensity synthesizes and sublimates the forms, while the outstretched hand receives the light beyond the picture plane in a way suggestive of Caravaggio.

The formal qualities of these works reemerge in the often-repeated theme of the sorrowful *Ecce Homo*: The first chronologically is that in the Metropolitan Museum in New York; next comes the one in the Spinola Collection in Genoa; then the *Christ at the Column* in the Collegio Alberoni in Piacenza (a replica of which was formerly on loan in the Kunsthistorisches Museum in Vienna); and finally some others of still-doubtful attribution. The theme attracted the artist strongly, perhaps because of the possibility that it offered of presenting in a way perfectly consistent with his temperament and his experiments the sadness of man within "an unchangeable mold of an architectural form" (Marangoni).

A parallel to the *Ecce Homo* is the richer and more varied series of portraits, begun with the one in Cefalù (PL. 321) and continued by two, equally sharp and incisive, in the Museums of Pavia and New York (Altman Coll.). These are, in turn, followed by that in the Johnson Collection in Philadelphia (PL. 320), closely related to the supposed *Self-portrait* in London; next comes the portrait formerly in the Hamilton Collection and now in the Staatliches Museum in Berlin, the *Portrait of a Man* in the Galleria Borghese, Rome, the so-called "*Condottiere*" in the Louvre, the portrait in the Museo Civico in Turin from the Trivulzio Collection, and lastly the small portrait in the Staatliches Museum in Berlin, which is the only one to have a landscape background. Here is a rich and varied gallery linked, as the succession itself confirms, to the various stages of Antonello's production and directly connected with his other works. The myth of "portrait painter" for some time obscured the real personality of the artist.

The *Polyptych of St. Gregory* (PL. 315) in the Museo Nazionale in Messina is from 1473, and it is necessary to remember the connections, already discussed, with the work of Piero to understand and place correctly this famous work, which is fundamental, as has been said, in Antonello's *œuvre*. The vital presence of the figures is determined by the extremely strict

perspective. The vanishing point avoids, with a deliberate rhythm, the symmetrical arrangement of traditional polyptychs and is made to fall, as Brandi has observed, not in the center of the middle panel, "but to the side, shifting the pose of the Madonna and putting the canopy to the right." By this device the artist projects the spatial illusion beyond the limits of the frame, while heightening the relief and the feeling of volume, "obtained without weighting down the shadows, by means of the rotation that is implicitly impressed on the central group by the noncoincidence of the axis of the panel with the perspective axis." It is the raking light, with its related slanting shadows, that impresses a potential rotation upon the figures in both the center and side panels; they exist in the ideal but measured space which extends in front of them, thanks to which they acquire character and significance. Though attuned to Piero, Antonello's handling of space and perspective differs considerably from the closest comparable work of the Umbrian master: *The Polyptych of the Misericordia* of 1445, now in the Pinacoteca di Borgo San Sepolcro. In some parts of that polyptych, and most markedly in the figures of St. Sebastian and St. John the Baptist, Piero recaptures the same kind of plastic energy that Masaccio, a score of years earlier, instilled in the figures of his polyptych (now dismembered) for the church of the Carmine in Pisa. Here the first temptation is to ignore the gold background and to focus solely upon the physical presence of the figures; but in certain parts of the painting, and especially in the *Crucifixion*, which as so often in the Tuscan tradition crowns the altarpiece, the background should not be discounted, for the luminous gold suffuses the tragic event with a mood of contemplation. In the strong reflected light that falls upon the figures, the gold background, as Longhi remarks, acquires a spatial function, because it acts upon them like the light that in other Pios reflects up from the noonday landscapes onto the absorbed protagonists.

However, in the Messina *Polyptych of St. Gregory* (PL. 315) the figures are not in tension with their background, nor yet do they have a sufficiently assertive plasticity to make it inactive; Antonello's figures appear monumental because they are bound in the most natural way to the perspective that leads them to converge in the center; in fact they come alive because, with absolute precision, they fall in with the perspective rhythm and acquire the grandeur of architecture. Here the gold background could almost be seen as a veiled curtain lowered over the landscapes of the London *St. Jerome* or of the Syracuse *Annunciation* (chronologically closer to the *Polyptych of St. Gregory*). These distant visions of nature remain detached from their surroundings as if they were small pictures within larger ones, whereas Piero's figures are steeped in the air and light of the countryside. The *Polyptych of St. Gregory* shows how Antonello translates Piero's art into his own personal language with a tight, rigorous rhythm.

However, his moment of equilibrium is brief; already in the Syracuse *Annunciation* old habits of thought gain the upper hand, to the disadvantage of his recent attainments. Even after Antonello's arrival in Venice, his reversion to Flemish motifs persists. Like the early Sibiu *Crucifixion* (PL. 314), the Antwerp *Crucifixion* (PL. 317) and the Correr *Pietà* (PL. 319) unfold their drama against the rolling, windswept hills of Messina. The Virgin and St. John in Antwerp balance each other independently of pedantic symmetry, like the Virgin and angel in the closely connected Syracuse *Annunciation*.

In the works which follow — the *St. Sebastian* in the Gemäldegalerie in Dresden (PL. 316), the *Altarpiece of S. Cassiano* (PL. 318), the *Crucifixion* in London (PL. 312) — the perspective focus, thanks perhaps to recent Venetian examples, once again becomes of primary importance and tautly composes into a single vision figures, architecture, and landscape. This impossibility of a form felt simultaneously as architecture and as color or, to be more explicit, the possibility of resolving color into architecture and architecture into color, must have seemed a startling novelty in Venice. It proved in fact to be the converging point between the old and the new tradition. At this crossroads, with his *St. Sebastian*, his *S. Cassiano Altarpiece* and the small late *Portrait* in Berlin, Antonello enters the

stream of Venetian painting, where his work provides a stimulus, rich in suggestions, not only for Giovanni Bellini but also for Lorenzo Lotto.

SOURCES. Apart from brief references in the writings or works of Colazio, M. Sanudo, M. A. Sabellico, M. A. Michiel, and Summonte, and from the biography of Vasari, the main sources for the reconstruction of the life and work of Antonello are to be found in the notary documents in the archives of Messina. The works to be consulted are: M. A. Michiel, *Notizia d'opere di disegno*, pub. and annotated by D. Jacopo Morelli, rev. ed., G. Frisconi, Bologna, 1884; F. Nicolini, *L'Arte napoletana del Rinascimento*, Naples, 1925 (includes the letter of Summonte to Michiel with its reference to the apprenticeship of Antonello to Colantonio); L. Beltrami, *Antonello chiamato alla corte di G. M. Sforza*, Arch. storico dell'Arte, VII, 1894 (important for references to the *Altarpiece of S. Cassiano*); F. Malaguzzi Valeri, *Pittori lombardi del Quattrocento*, Milan, 1902, pp. 88-89 and p. 217, for the mention of Antonello among the *provisionati* of the ducal household (Wittgenstein — see *La pittura lombarda nella seconda metà del Quattrocento*, Storia di Milano, VII, pp. 751-52, 1956 — has shown that the names taken from the papers in the ducal archives are of artisans, not artists); G. Di Marzo, *Di Antonello d'Antonio da Messina: primi documenti messinesi*, Arch. storico messinese, 1903; C. La Corte Cailler, *Antonello da Messina*, Arch. storico messinese, 1903; G. Di Marzo, *Di Antonello da Messina e dei suoi congiunti*, Palermo, 1903; G. Di Marzo, *Nuovi studi ed appunti su Antonello da Messina*, Messina, 1905. In these last two works are presented all the documents taken from the archives in a reasonably trustworthy paleographic transcription. Also, for information concerning the family of Antonello, see E. Mauceri, *Nuove notizie intorno alla pittura e scultura del Rinascimento in Messina*, Atti della R. Acc. Peloritana, XXIX, 1920, and the fasc. *Antonello da Messina with writings by E. Mauceri and L. Perroni-Grande*, 1923, Circolo Artistico di Messina.

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Illustrations: PLs. 310-321.

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APELLES. Greek painter, son of Pytheas and brother of the painter Ktesiochos, born at Colophon but also held to have been a native of Ephesus (Strabo, XIV, 642; Lucian, *Calumnias non temere credendum*, 2) or of Kos (Ovid, *Ars Amatoria*, III, 401, and Pliny, *Naturalis Historia*, XXXV, 79) because of his long residence in these cities. He flourished during the second half of the 4th century B.C. From his connections with Alexander the Great, Pliny places the height of his activity in the 112th Olympiad (332-29 B.C.), but his frequent relations with Ptolemy and Antigonos and his friendship with Protogenes prove that he was still working in the last years of the 4th century. He was court portrait painter to Alexander, after completing his apprenticeship at Ephesus under Ephoros and at Sikyon under Pamphilos of Amphilopolis. He had as his disciple Perseus, to whom, perhaps, he dedicated the lost treatise on art mentioned by the sources without identification of its specific subject.

WORKS (all lost). *Aphrodite Anadyomene* (Pliny, op. cit., XXXV, 91; Ovid, *Amores*, I, 14, 35; Strabo, XIV, 657; Ovid, *Ars Amatoria*, III, 401 f.; Ovid, *Epistulae ex Ponto*, IV, 1, 30; Cicero, *Epistulae ad Atticum*, XIII, 590), painted for the Asklepieion at Kos, transported by Augustus to the Temple of Caesar in Rome. The lower part having deteriorated with the passage of time, it was restored under Vespasian (Suetonius, *Vespasianus*, 18); later, a restorer of the time of Nero, for reasons of conscience, refused to carry out such work, and the painting was removed from view and replaced by a copy made by the painter Dorotheos (Pliny, loc. cit.). — A second *Aphrodite* for Kos, of which only the head and shoulders were finished by Apelles before his death (Pliny, op. cit., XXXV, 92 and 145). This is thought by some to be identical with the preceding work and a duplication due to Pliny (cf. Bianchi-Bandinelli, *Il problema della pittura antica*, Florence, n.d., p. 87). — *Artemis* (Pliny, op. cit., XXXV, 96) surrounded by maidens sacrificing (or running?, cf. Dilthey). — *Herakles* (Pliny, op. cit., XXXV, 94), back view, transported to Rome. The hypothesis of J. Six that a derivation of this type may be traced in the well-known painting of Hercules and Telephus from Herculanum is rejected by Seuer. — A nude *Hero* (Pliny, op. cit., XXXV, 94), thought by Six, after a comparison of the variant readings of the Pliny codices, to refer to the myth of Hero and Leander, a theory unanimously dismissed by other writers (cf. Pfuhl, p. 744). — *Charis* (Pausanias, IX, 35, 6), in the odeion at Smyrna. — *Tyche Enthroned* (Stobaeus, *Florilegium*, CV, 60). — *Calumny* (Lucian, op. cit., 4), an allegory painted after his rival Antiphilos had intrigued to discredit him in the eyes of Ptolemy, King of Egypt. A complex scene, reconstructed by Botticelli in his *Calumny* (Uffizi), on the basis of Lucian's description. — *Thunder, Lightning, and Thunderbolt* (Pliny, op. cit., XXXV, 96), personifications, perhaps female. — *Procession of Megabaios*, priest of Artemis Ephesia (Pliny, op. cit., XXXV, 93), which some have identified with the sacrifice of a bull in the Asklepieion at Kos, described by Herodas (IV, 66); cf. Diels. — *Portraits of Philip* (Pliny, loc. cit.). — *Alexander* represented as Zeus wielding a thunderbolt, in the Temple of Artemis at Ephesus (Pliny, op. cit., XXXV, 92). A painting in the House of the Vetii at Pompeii (pl. 322) has been thought by some to be a copy of this work (De Lorenzo). — *Alexander with Victory and the Dioscuri*, later transported to Rome (Pliny, op. cit., XXXV, 27 and 93). — *Alexander in Triumph*, showing also an *imago belli* with hands bound behind his back (probably a prisoner, rather than a personification of War), later placed in the Forum of Augustus (Pliny, op. cit., XXXV, 93). — *Alexander on Horseback*, in Ephesus (Aelian, *Variae Historiae*, II, 3). — Two portraits of *Antigonos*, one on horseback and one standing beside his horse (Pliny, op. cit., XXXV, 90 and 96). — *Kleitias*, the friend of Alexander, leaving for battle on horseback, with a soldier handing up his helmet (Pliny, op. cit., XXXV, 93). — *Menander*, King of Caria, in Rhodes (Pliny, loc. cit.). — *Neoptolemos*, on horseback, in a battle against the Persians (Pliny, op. cit., XXXV, 96). — *Archelaos*, one of Alexander's officers, with his wife and daughter (Pliny, loc. cit.). — *Panharpe*, concubine of Alexander, shown in the nude (Pliny, op. cit., XXXV, 86). — *Gorgosthenes*, tragic actor, in Alexandria (Pliny, op. cit., XXXV, 93). — *Antaeus*, not otherwise identified, in Alexandria (Pliny, loc. cit.). — *Habron*, perhaps a painter, in Samos (Pliny, loc. cit.). — *Self-portrait* (*Anthologia Palatina*, IX, 595). — *Monoknemos* (Petronius, *Satyricon*, 83), a work not further identified (Aphrodite, Laïs, Antigonos? see BIBLIOG.).

All the sources that have come down to us are agreed that Apelles should be considered the greatest painter of antiquity (cf., e.g., Pliny, op. cit., XXXV, 79). Even if we ascribe such unanimity to the classicist tendencies of the authors who wrote on the subject and of those who quoted them, it seems at least

legitimate to assert that he represented Greek painting at its zenith, prior to the Hellenistic age. The lack of original works, especially in painting, makes any judgment difficult: almost nothings remains, in fact, which could lead back to Apelles, with perhaps the one exception of the *Aphrodite Anadyomene*. Augustus paid the city of Kos an indemnity of 100 talents for the loss of the painting, which was transported to Rome. This was an immense sum for the period, and it is a valuable index of the passion of the Romans for the products of Greek art and culture and also of the esteem in which this particular masterpiece was held. The goddess emerged nude from the waves, seeing the light of day for the first time and wringing the spray from her hair with the tips of her fingers.

No copies or variations of the *Aphrodite Anadyomene* have come down to us, although it was praised by all, and, indeed, it may be owing to this very fact that none dared to make the attempt, fearing adverse comparison. On the other hand, statues of the goddess wringing out her hair (among which the *Venus of Cyrene* is justly famous) are quite numerous, although only one of them seems to echo the masterpiece of Apelles. This is a statuette, formerly in Turin and now in Philadelphia (pl. 322), which is cut off at the beginning of the thighs. It is more than probable that this figure once adorned a little fountain, where, mounted on a well-concealed base, it appeared to rise out of the water slowly and effortlessly. The anatomical type would not appear to belie the derivation, if it is permissible to base the idea upon the nickname, ἰσχυγγελεύς — agile as an eel — given to the beautiful Laïs, who is said to have posed as the model for the Anadyomene, the more so as Apelles himself recognized that his figures did not correspond to the canons of beauty based on proportion. These canons he knew, from having followed for some time the teaching of Pamphilos of Amphilopolis, the head of the Sikyonian school, which was founded upon symmetry, that is, upon a mathematical system of proportions. Since Apelles was conscious of his inability to reconcile his own ideal of beauty with those laws, it is clear that he trusted to what is today called intuition or sensibility, an indefinable, incommensurable quality, which in the eyes of the ancients (for the Greeks were less slaves to ratiocination than is generally alleged) was more esteemed than the meticulous observance of rules. Apelles himself was aware of this when he said that he was superior to Protogenes because he knew or, as we would now say, felt, when to lift his hand from a painting lest niggling detail destroy the grace of the work. And the word *gratia*, with which Pliny (op. cit., XXXV, 79) translates the Greek χάρις, should in the writer's opinion be translated as festiveness, serene joy.

How was this freshness obtained? No doubt by a skillful use of color. Since the early attempts of Apollodoros, later developed by Zeuxis, a century had elapsed during which colored drawing, in other words the use of color for the mere differentiation of surfaces, was giving way to an effort to produce effects of volume in color by chiaroscuro and by varying intensities of tone.

An undisputed rule that dominated the entire evolution of Greek art prescribed that every development should proceed by degrees, and from this Apelles could not think of deviating. Like other contemporary artists, Apelles used only the four traditional colors (Pliny, op. cit., XXXV, 59 and 92), white, black, yellow, and red, all of which were already in use two centuries earlier on Attic black-figured vases. The novelty of the painting of his generation consisted in the blending of these four colors. How preoccupied Apelles was by his desire to master new techniques that would permit him to achieve unprecedented color effects is confirmed by the following anecdote: Having in mind to paint a fiery horse forcibly held back by his rider, Apelles was obsessed only by the problem of how to render the blood-flecked foam that issued from the animal's mouth. A similar anecdote is also related of Protogenes, who despaired because he could not find the right blend of colors to show the froth flowing from the mouth of a dog, but it could hardly be considered strange that two great artists, bound by a sympathy that had its roots in similar artistic ideals, should be facing the same challenge. That rich chromatic effects, and

even at times spatial ones, could be obtained just by the combination of the four colors is shown, notwithstanding its limitations, in the mosaic of Alexander (*Battle of Issus*, Naples Museum), which was copied from a large painting while Apelles was still alive.

Apelles was also famous for his use of a varnish in which was diluted a certain black known as "elephantine" because it was obtained from burned ivory. He covered the surface of a finished painting with this substance to tone down the excessive brightness of the colors and also to protect the work from dust.

Finally, it may be mentioned that Apelles has sometimes been compared with Raphael for his *gratia*, which combines a harmonious blending of colors and a pleasing arrangement of figures, and for his skill in portraiture — witness the small yet accurate Pompeian portrait of Alexander as Zeus enthroned, which seems to reflect Apelles' great original (PL. 322). From what little we know and what little we feel justified in imagining, the comparison between the two painters holds true.

SOURCES. Pliny, *Naturalis Historia*, XXXV, 27, 42, 50, 79-97, 145; Strabo, XIV, 642; Lucian, *Calumniae non temere credendum*, 2 and 4; Lucian, *Imagines*, 7; Ovid, *Art Amatoria*, III, 401 f.; Ovid, *Amores*, I, 14, 35; Ovid, *Epistulae ex Ponto*, IV, 1, 30; Clement of Alexandria, *Paidagogos*, II, 125; Petronius, *Satyricon*, 83; Plutarch, *Alexander*, 4; Herodas, IV, 66; Cicero, *De natura deorum*, I, 27, 75; Cicero, *Epistulae ad Atticum*, XIII, 590; Suetonius, *Vespasianus*, 18; Pausanias, IX, 35, 6; Stobaeus, *Florilegium*, CV, 60; *Anthologia Palatina*, IX, 595.

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PAOLINO MINGAZZINI

[Illustration: PL. 322.]

APOLLodorOS OF DAMASCUS. Architect and engineer, born in Syria, probably in Damascus, in the second half of the 1st century of the Christian era. He went to Rome, perhaps in the time of Domitian, and was most active during the reign of Trajan (A.D. 97-117). He was official architect to this emperor and followed him on his military campaigns. With Hadrian, before he became emperor, Apollodoros fared less well because he had charged the former with incompetence as a critic of architecture, exhorting him to "go back to his nasturtiums." Nevertheless, toward A.D. 120 he collaborated with Hadrian in some plans, never carried out, for a colossal statue of the Moon to be erected opposite that of the Sun (*Historia Augusta*, Hadrian, 19) and, in spite of the doubts expressed, dedicated to him his treatise entitled *Poliorketika*. According to the report, sometimes questioned but probably exact, of Dio Cassius, Hadrian condemned Apollodoros first to banishment and then to death after his harsh criticism of the Temple of Venus and Rome in A.D. 130, when its construction was already advanced (it had been begun in about 121 or 123 and was dedicated in

the year 134). There is a probable portrait of Apollodoros in the Glyptothek at Munich (*ArndtBr*, 46-47), and he is thought to be represented by a figure on Trajan's Column (K. Lehmann-Hartleben, *Die Trajanssäule*, pl. 45, XCIX).

WRITINGS. *Πολιορκητικά*, a treatise on the construction of engines of assault, the fruit of personal experience. This work, of which a summary survives, had much influence in later centuries and especially upon the *Poliorketika* by Hero the Younger of Byzantium in the 10th century (C. Weacher, *Poliorketika des Hero*, Paris, 1867, pp. 135-193; Fr. trans. by E. Lacoste, *Les Poliorketika d'Apollodore de Damas*, REG, III, 1890, pp. 230-281). Apollodoros appears to have written several other technical works (cf. Tzetzes, *Allegories Iliades*, V, 17), including one on the Danube bridge (Procopius, *De Aedificiis*, IV, 6, p. 288).

WORKS. a. Known: Bridge over the Danube near Drobeta (PL. 324), constructed of stone and wood between A.D. 104 and 105, known from the sources (Dio Cassius, LXIX, 4) and reproduced on Trajan's Column (K. Lehmann-Hartleben, *loc. cit.*). — Odeum, mentioned by Dio Cassius (*loc. cit.*) and described by Pausanias (V, 12, 6) as a round theater. This may perhaps be the odeum built by Domitian on the Campus Martius (exact site unknown). — Gymnasium (Dio Cassius, *loc. cit.*), to be identified with the Baths of Trajan on the Esquiline (some remains). — Trajan's Forum (PL. 323; FIG. 513), built between A.D. 107 and 113 (Dio Cassius, *loc. cit.* and LXVIII, 16, 3; Aurelius Victor, *Caesares*, 13, 5), partly preserved. — Circus, perhaps for *naumachias*, built to the west of Hadrian's Mausoleum. Referred to by Pausanias (*loc. cit.*), together with the preceding works, without naming Apollodoros. **b. Attributed to Apollodoros by modern scholars:** Participation in the construction of the port of Rome at the mouth of the Tiber (now Fiumicino). — Port of Centumcellae (Civitavecchia). — Triumphal arch at Ancona. — Triumphal arch at Benevento. — Monument at Adamkissai in Dobruja. — Alterations in the Pantheon in 115-20.

Apollodoros was a native of a region crossed by many currents. He was the heir of the Hellenistic traditions of Pergamum and Alexandria which, after contact with local Syrian art currents and stimulation by new Western influences of the Augustan Era, had produced the Temple of Jupiter Heliopolitanus and other great structures at Baalbek and the Temple of Baal at Palmyra. It was in this atmosphere that he was formed, even though nothing is known of any activity of his in his native land.

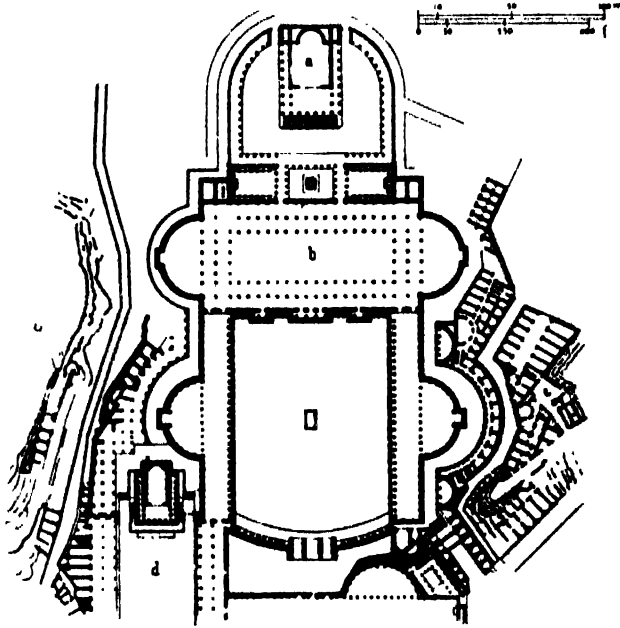
Procopius (*loc. cit.*), who refers to the technical experts under other emperors as "mechanicos" or "mechanopoios," reserves the term "architecton" for Apollodoros alone. This is a noteworthy distinction which enhances the figure of Apollodoros. He is an architect in the real sense of the word, who works with complete independence and not as a simple technician or imperial functionary, as Hadrian would, no doubt, have preferred. The evolution of building techniques hastened the process of the assimilation of the architect to the engineer, an amalgamation that was not complete until Byzantine times. Apollodoros stands at the turning point: the last of the great architects, the first engineer.

It is to Apollodoros the engineer that the earliest of his definitely known works must be attributed: the bridge over the Danube near Drobeta (PL. 324), built in A.D. 104, before the second Dacian war. The relief of the bridge on Trajan's Column shows a superstructure in wood, and although Dio Cassius mentions a stone bridge, he is perhaps referring only to the piers. This would explain how it was possible for Hadrian to remove the wooden floor of the structure to prevent the passage of the barbarians. The use of wood in the Drobeta bridge shows Oriental methods of bridge building which are to be seen applied in an identical manner on Indian monuments.

The work of Apollodoros as an architect was far more extensive. He designed or inspired almost all the buildings erected by Trajan. Dio Cassius mentions an odeum, described by Pausanias (V, 12, 6) as a completely round theater. Only one edifice seems to correspond to this description: the odeum built by Domitian on the Campus Martius (G. Lugli, *Mon. Ant. di Roma*, III, p. 224). Identification with this would make it one of the first undertakings of Apollodoros after his arrival in Rome. The gymnasium, also mentioned by Dio Cassius, is to be identified with the famous baths on the Esquiline hill

built over the Golden House of Nero after the fire of A.D. 104, and their plan already reveals all the characteristics of the architectural style of Apollodoros: a vast, regular structure, symmetrically organized on an imposing axial system that allows a functional arrangement of all the halls.

The masterpiece of Apollodoros was the Forum of Trajan (PL. 323), begun after the victory over the Dacians (107). The great work, including the Column, was inaugurated in 113, but the triumphal arch of the propylaeum was not completed until 117, and the temple was dedicated to the deceased emperor



Plan of Trajan's Forum, Rome: (a) Temple of Trajan; (b) Basilica Ulpia; (c) Capitoline Hill; (d) Caesar's Forum.

by Hadrian. A triumphal arch led into the forum, which was surrounded by a colonnade and had in the center an equestrian statue of Trajan. Two hemicycles opened from the sides of the forum, and in the background rose the Basilica Ulpia; beyond it lay a court in which stood the Column of Trajan flanked by the Greek and Latin libraries.

The Column is famous for its continuous spiral frieze narrating the history of Trajan's campaigns in Dacia. The problem of the ascription of this monument to Apollodoros is unsolved and controversial, a fact which also applies to the statues of the emperor and the bas-reliefs in the forum, some of which were later incorporated in the Arch of Constantine. No source specifies that Apollodoros was Trajan's master of public works, because to ancient authors he was an architect. His influence upon the cartoons for the reliefs seems to be indubitable: the technical precision of architectonic elements and the minute observation of places and landscapes all indicate the precise competence of an architect.

Apollodoros also planned the markets (PL. 323) at the extreme end of the Quirinal hill overlooking the forum, where commercial activities administered by the state were located. These are completely functional in design and fit harmoniously into their surroundings.

The essential elements of the artistic personality of Apollodoros are revealed by his scheme of the forum. The arrangement of the building along an axial system, always with a subtle play of symmetry, is masterly, and so also is the juxtaposition of curved and straight elements in the ground plan. The apses of the exedrae determine a secondary transverse axis that is a forecast of the great parallel axis of the basilica itself. In the elevation, however, the entablatures give a prevalently horizontal and rectilinear accent. Apollodoros had, in fact, criticized Hadrian's plans because they showed an unbalanced association

of vaults and rectilinear elements. The same classical spirit prevails in the use of decorative motifs: there is a reaction against the play of light and shadow so noticeable in architectural decoration of the Flavian period and also a strict subordination of the sculptural elements to the architectural framework. Finally, a conscious respect for the Roman tradition can be seen in the plans of the court and the basilica, essentially architectural transpositions of the Roman praetorium. The character of these works confirms that the Hellenic tradition permeated both the sensibility and the technique of the architect.

Should we see in Apollodoros a late representative of the Greek and Oriental tradition and in Hadrian the innovator and defender of the Roman and Italic spirit? The answer cannot be categorical, since the originality of Apollodoros may ultimately lie in his inventive mingling of the Hellenistic and purely Roman traditions.

SOURCES. Dio Cassius, LXIX, 4; Procopius, De Aedificiis, IV, 6, p. 288; Historia Augusta, Hadrian, 19; Tzetzes, Chiliades, II, 80 f.; and Allegoriae Iliadae, V, 17 f.; Pausanias, V, 12, 4.

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Illustrations: PLS. 323, 324; 1 fig. in text.

APPLIED ARTS. See CERAMICS; FOLK ART; FURNITURE; GLASS; GOLD- AND SILVERWORK; HANDICRAFTS; HOUSEHOLD OBJECTS; INDUSTRIAL DESIGN; METALWORK; ORNAMENTATION; TAPESTRY AND CARPETS; etc.

ARABIA. Included in the scope of this article are the states of the Arabian peninsula, namely, Saudi Arabia, Yemen, Oman, Kuwait, and the British protectorates of Aden, Trucial Oman, and Bahrain. For the sake of geographical completeness the countries covered in this article will also include parts of the states of Jordan (q.v.), Iraq (q.v.), and Syria (q.v.).

SUMMARY. Geography (col. 514). Historical survey (col. 518). General features and prehistoric art (col. 522). Northwestern Arabia (col. 524): Pre-Islamic period; Islamic period. Southern Arabia (col. 528): Ma'in; Saba': a. Pre-Islamic period; b. Islamic period. Qataban; Hadhramaut; Dhofar. Eastern and central Arabia (col. 536).

GEOGRAPHY. Arabia has long been associated with the idea of the Bedouins, the steppe, and the desert. It is referred to in this way in the Bible (e.g., Isaiah 33:9 and Jeremiah 50:12; 51:43), and there is still earlier mention of it in the cuneiform literature (*mišl Arabi, mišl Aribi*). The earliest mention of the territorial name goes



Arabia: Principal centers of art. Key: (1) Prehistoric remains; (2) archaeological sites; (3) pre-Islamic sanctuaries; (4) Islamic sanctuaries; (5) Christian churches.

back to the monolith of Shalmaneser III (859-825 B.C.), the inscription on which refers to the Arab Gindibu (Jundab) and his army of a thousand camels. The name at first denoted the desert to the east and south of Syria, but in the course of historical time it came to be understood in a broader sense. According to Pliny, for instance (*Naturalis Historia*, VI, 142 ff.), Arabia begins at the Amanus Mountains, thus including all northern Syria up to a point north of Antioch, as well as the Sinai peninsula up to the Pelusiac Branch of the Nile. Actually, Arabia is not separated by natural boundaries from either Syria or Mesopotamia, with which it forms a geological continuation of Africa. Thus, in the broadest sense, Arabia would extend as far as the foothills of the mountains of Asia Minor and include both Syria and Mesopotamia. For the historian of art, however, such a broad definition would naturally be impractical, for these two countries followed their own paths of development (see SYRIA, SYRIAN ART, MESOPOTAMIA), although they maintained relations with Arabia in the narrower sense. In confining ourselves to Arabia in the narrower sense, we may point to its Arabic name, *Jazīrat al-'Arab*, "the island

of the Arabs" — an island bounded by the Red Sea, the Indian Ocean, the Persian Gulf, the Euphrates, and the Jordan. In the northwest, the scarp of the calcareous plateau which extends from the southern extremity of Jebel el-Sherā (the mountain range of ancient Edom) eastward into the Syrian Desert, provides a natural boundary. The southern slope of the Sherā chain, which has always marked the boundary between the sedentary peoples and the nomads, constituted, even in the Roman epoch, the southern boundary of Syria, coinciding with that of Arabia Petraea and extending from the Red Sea across the mountains of Irām (Jebel Rām, Ramm, Arām, Rum) to this range. It will also prove useful to trace its northeastern boundary from the Jordan depression, along the mountainous edge of Damascus, past Palmyra, to the Euphrates; or, more accurately, to let it coincide with the outer Roman limes, extending from the Euphrates (Sura) south of Palmyra (Tadmor) through Bosra (Bostra), Philadelphia (Amman), al-Qastal, and Adruh, to Elath (Aila, 'Aqaba), about midway between the Trajan Way and the later Arab pilgrim route to Mecca (used today as the Hejaz railroad).

Consequently, Palmyra and Petra will not be discussed here; actually, although their population is Arab, they belong to the Syro-Aramaic cultural area, which extended, in the neo-Babylonian epoch, as far as Taima, and in the Roman epoch as far as the territory of the Thamud, who, between A.D. 166 and 169, erected a temple in honor of the emperors Marcus Aurelius and Lucius Verus at Ruwāfa. In the north their territory bordered Palestina Salutaris and reached as far as the oasis of el-Hijr. Occasionally, it is true, the Roman influence seems to have extended much farther south, into today's province of Hejaz; for example, under the phylarch Amorkesos, it reached as far as "the city of the Prophet" (Medina), indeed, as far as Mecca itself, if we are to believe the Arab tradition concerning the investiture of 'Uthmān ibn Huwairith as prefect or king of Mecca. And it is certain that the Roman march and the kingdom of the Arab Gassanid princes extended from Hermon to Aila on the one side and to the oasis of el-'Ulā, Khaibar, and even Hail in the Nejd on the other; and the kingdom of the Arab Nabataeans stretched from el-'Ulā past Petra to the oasis of Damascus. In the imperial era, the Romans had naval bases and customs offices at Aila (west of modern 'Aqaba), headquarters of the Roman Legio Decima Fretensis, from which ships sailed directly to Adulia on the Ethiopian coast, and at Leukekome (Ḥawṭā), Muza (Mauza'), and Adana (Aden, Gr. Ἀραβίας ἐμπορίον).

Within the boundaries described above, the Arabian peninsula is about 1,370 miles long and 750 miles wide and, like India, constitutes a subcontinent of Asia (fig. 525). By far the larger part of this subcontinent, extending over 1,000,000 square miles, is occupied by desert. The western part is dominated by the Sarīf mountain range, which runs parallel to the Gulf of 'Aqaba and the Red Sea, with an average altitude of 6,500 ft., rising to more than 13,000 ft. in Asir and to 11,000 ft. in Yemen (in Jebel Hadhr Nebi Shu'ayb). In this mountainous region of Yemen, with its lands descending on the east to the Saihad Desert, are found the sites of ancient culture: the heart of the states of Arabia Felix, Ma'in in the Jawf, the stretch of flatland that cuts deep into the mountains, Saba' at the eastern foot of the Yemen Mountains, Qatabān to the south of them, on the northern slope of the massif looking eastward, Awsān south of Qatabān in the same massif, and Hadhrmaut to the east of Awsān, at the mouths of the Wadi Hadhrmaut and the Wadi 'Irma.

It is noteworthy that the capitals of all these kingdoms lie in valleys sloping down toward the Saihad or Rub' al-Khali desert, that is, in the part of the Arabian plateau turned toward the desert. Only the later capital, Zafār (Gr. Σαφάρα, *Periplus Maris Erythraei*, 23: Tapharon), seat of the rulers since A.D. 26-29, lies within the Yemen massif itself. Moreover, the central areas of those states were relatively small. As regards its habitability in historical times, the enormous territory of Arabia is largely dependent on climatic conditions. In the Pleistocene Age and perhaps as late as the Neolithic, Arabia had a damp, cool climate with rainy seasons. The valleys, in part extremely deep, which extend from the Yemen Mountains and the Hadhrmaut plateau toward the desert and which formerly assured drainage of the waters to the Persian Gulf, still testify to the effects of the cloudbursts in the rainy season. Only after the end of the glacial age, about the 10th or 6th millennium B.C., did the climate change; then the large desert plains were formed, replacing the previously fertile Arabian plateau. Even during historical times a further deterioration of the climate seems to have taken place. For example, W. Thesinger discovered 50 dead palm roots in Wadi 'Aidam (Dhofār), which prove that this valley was in ancient times more fertile than today; and E. Glaser found similar evidence in Yemen. At present the rains indispensable to agriculture fall only in Jordan south of Ma'an, on the peripheral mountains of Asir and Yemen, and around Jebel Ahdar in Oman. In the greater part of these regions rain water must be collected from the slopes and river beds (Sha'b). In the valleys and at the foot of the massifs of the central Sarīf, Asir, and Yemen, particularly in the coastal plains (Tihama), agriculture depends on the high-water periods of the watercourses. In ancient times the waters were stored by means of imposing dams, near Marib and the lower Wadi Hadhrmaut, for example. Elsewhere the water supply was often secured by means of cisterns, some of them extremely large. The whole complicated water economy at an early period led the inhabitants of the southwestern part of Arabia to unite, for the purpose of large-scale construction projects, in a disciplined community of labor that created one of the most important prerequisites not only for material well-being but also for cultural development. The southwestern corner of Arabia, even today, constitutes the most favored part of the peninsula both culturally and as regards the density of the population. Out of the 10 to 12½ million inhabitants of Arabia, 5 million live in Yemen alone, a country covering 75,000 square miles. Perennial rivers play no great part in Yemen, although the Wadis of Blaha, Nejrān, Khārid, and Rema' made it possible

for important cultural centers to arise in Asir and in northern Yemen; however, thanks to rockborn springs, oases were formed in the northern Hejaz, the Nejd, al-Ḥasa (Huḥūf and al-Qatīf), the island of Bahrein, Oman (Hajar) and in southern Hadhrmaut. These are the main regions in which cultural centers have existed in historical times.

However, Arabia was also important as a land bridge between Eurasia and Africa, for the main roads of communication in the Near East passed through it. One of these went through Syria, Palestine, and the Isthmus of Suez to Egypt, with a branch line from Gaza-Petra to the center of the "land of incense" (Shabwa), the so-called "incense route," which ran from Shabwa, through Timna', Hajar, Hīnū el-Zireir, the Mabaqah Pass, Harīb, Marīb, the Jawf, Nejrān, Tabāla, Turaba, and Taif to Mecca, from there to the Tihama, then through Yathrib (Medina), Dedan (el-'Ulā), Arām, and Petra to Gaza and across the Sinai peninsula along the coast to Memphis, and, on the other side, along the Palestine-Phoenician coast, through Damascus, Palmyra, and Dura, to Mesopotamia (cf. Mustapha Amer, *The Ancient Transpeninsular Routes of Arabia, Comptes-Rendus du Congrès International du Caire de 1925*, V, 1926, pp. 126-40; A. Grohmann, *Südarabien als Wirtschaftsgebiet*, II, Vienna, 1933, pp. 117-8; N. St. J. Groom, in G. Ryckmans, *Inscriptions sud-arabes*, VIII, *Le Muséon*, LXII, 1949, pp. 74-5; H. Ingrams, *Burton Memorial Lectures*, From Cana [Huan Ghorab] to Sabbathā (Shabwa): The South Arabian Incense Road, *JRAS*, 1945, pp. 169-85; C. Rathjens, *Die Weihrauchstrasse in Arabien*, *Tribus, Jhb. des Lindenmuseums*, Stuttgart, 1952-53, pp. 281-83; F. Stark, *The Southern Gate of Arabia, A Journey in the Hadhrmaut*, London, 1941, pp. 209-79). A transversal of this road went from Nejrān through Wadi Dawasir, el-Aḥāj, Kharj, and al-Yamāna to the Persian Gulf, and from there through al-Ḥasa to Mesopotamia. The other great road led from eastern Arabia across Bab el Mandeb to Somaliland. Thus a considerable part of the trade with India went through the Persian Gulf and Mesopotamia (Bahrein probably serving as the port of transshipment) to the Mediterranean, or by sea and land toward Arabia Felix and then, along the Red Sea, to the Mediterranean and Egypt. These routes were supplemented by cross routes through the Red Sea (Leukos, Limen, Qussair to Qana, and later to Berenice). It was thanks to this trade and the production of incense and other aromatic stuffs so highly appreciated in antiquity, as well as noble metals and precious stones, that the southern Arabians played the role of intermediaries in the circulation of the fabulous riches reported by classical authors.

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HISTORICAL SURVEY. The earliest history of the Arabs is still shrouded in darkness; it is not until the middle of the 9th century (854 B.C.) that they emerge into the full light of history with Gindibu, who fought at the side of Benhadad II of Damascus against Shalmaneser III. Defeated, the Arabs were compelled to pay tribute to Assyria, from which they repeatedly tried to free themselves. However, Muširi (Midian, Taima, and northern Hejaz) was for a time firmly held by the Assyrian kings, and Sennacherib (705-681 B.C.) is referred to by Herodotus as "King of the Arabs and the Assyrians" (II, 141). However, this did not solve the political prob-

lem of eliminating the nomadic centers of unrest, and King Nabonidus of Babylonia sought to attach the Arabs to himself more closely by moving his capital to Taima (550-542 B.C.). The failure of this policy and the collapse of the neo-Babylonian empire brought the Arabs into a certain subjection to the world empire of the Achae-menids and later to that of Alexander the Great and his successors; western Arabia fell to Ptolemy, and the majority of the Arabs joined Antiochus (Polybius, V, 71). These Arabs were probably the predecessors of the Nabataeans; Arab colonies were now founded at the foot of the Lebanon range and in Syria, and Tigranes also attempted to settle the Bedouins. About 115 B.C. the Lihyanites (Lat. Lechieni, Laenitae, Pliny, *Naturalis Historia*, VI, 155, 156; Gr. Λαγυῖται Ptolemy, VI, 7, 18), a North Arabian tribe, penetrated into the northern Hejaz and occupied the oasis of Dedan (el-'Ulā), which until then had been a northern Minaean colony. The territory of the Lihyanites seems to have extended about 13 miles south of that oasis (with Šaw'ar) and about 87 miles to the west, toward the coast of the Red Sea (Rābigh). In 9 B.C. the Lihyanite kingdom was occupied by the Nabataeans and held by them until A.D. 80-90. The restored second Lihyanite kingdom endured until the second half of the 2d century, when it was probably conquered by the Bedouins on its borders. In the interval, the Romans, as a result of their intervention in Syria, came into closer contact with the Arabs, whom they sought to gain as allies against the Parthians and their own countrymen in the Syrian-Arabian desert. This policy was successfully continued by the Byzantine emperors. Thus the Arab-Syrian frontier march was created with Gassanid as its phylarch; the Persians countered by marching on the Euphrates, under the Lakhmids, which remained under Persian sovereignty until A.D. 602.

At the beginning of the 4th century Mar' al-Qais was supposedly the king of all the Arabs; in reality he probably ruled only the Asad and Nizār tribes. Then the great Kinda tribe gained power in the Nejd, making war on both Byzantium and Persia; Al-Hārīt ibn 'Amr ('Αρῆταρ) even conquered part of Iraq (A.D. 503-6), including the Lakhmid frontier province and Oman. After he had been driven out of Iraq, he rejoined Byzantium and was made phylarch of the Arabs. After his death (A.D. 528), the kingdom of Kinda was dissolved, and a large part of this tribe migrated to Hadhramaut, where it settled about A.D. 543. Al-Hārīt's nephew, Qais ibn Salama, presumably the Κάισρος referred to in Byzantine sources, was appointed governor of Palestine. The long and inconclusive struggles of the Bedouin tribes of inner Arabia among themselves and against the Byzantine and Persian frontier provinces are recorded in Arabian history as "the Battle Days of the Arabs." The Arab expedition against Khaibar in A.D. 567 brings us close to the year of birth of the Prophet Mohammed, who was to give a new turn to the fate of all Arabia.

So far we have not considered the history of southwestern Arabia. Unfortunately we know far less about it than might be expected, for there is no equivalent to the Assyrian and Egyptian chronicles. "Historical" texts, such as the gigantic Glaser inscription No. 1,000 at Sirwāh and a few others, are rare. The history of this region can be sketched only in rough outline. The most important group here was without doubt the Sabaeans, the valiant tribe inhabiting the irrigated zone of the Wadi Dhana, which in 738 B.C. was referred to as the Saba'i in the chronicles of Tiglath-pileser, and whose prince It'amra is mentioned as a tribute payer in the inscription of Sargon of Assyria, of 714 B.C. It is thus possible to date the beginning of the history of southern Arabia in the 8th century B.C. The question of how long the Minaeans, who settled the region of Jawf ibn Nāḡir as far as the Red Sea, had been in Yemen before the Sabaeans could no doubt be definitively answered only by thorough excavations in the ruined cities of the Jawf. The excavations at Hajar ibn Ḥumeid, for example, have uncovered the earliest layers dating from the 13th to the 10th centuries B.C., and the earliest Qatabanian inscription from the Wadi Beihān may be assigned to the 10th century B.C. (*BAMSOR*, 137, 1955, p. 38; 138, 1955, p. 50). However, the Sabaeans may have immigrated into southern Arabia as early as 1200 B.C., and the Minaeans about 300 years earlier. So far, it is true, we know the Minaeans only as contemporaneous with the Sabaeans, who incidentally possessed an enclave in Harim within Minaean territory. But the Minaeans were the first to engage in the incense trade (Pliny, *Naturalis Historia*, XII, 54), and this assures them a certain priority. In the northern Hejaz they also had a colony in Dedan (in inscriptions, 'Ulat, 'It, el-'Ulā), which is described as a "Minaean march" (Ma'in Muḡrān) and must have been in existence from the end of the 5th century to some time between 90 and 70 B.C. Their trade relations probably extended farther. We find evidence of them in Rām at the northern tip of the Hejaz, where there are five Minaean inscriptions (*RBib*, XLIII, 1934, p. 590), in Memphis (*Rép. d'Ep. Sémitique*, 3427), in the island of Delos (*Rép. d'Ep. Sémitique*, 3427), and in Uruk (Warka) in Babylonia (*Rép. d'Ep. Sémitique*, 2689). There was also a Minaean

colony in the "land of incense" itself, Dhofār (Conti Rossini, *RendLinc.*, XV, 1906, p. 54). Their trade relations with Gaza, Egypt, and Assyria are attested by inscriptions collected by E. Glaser (*Akademie der Wissenschaft*, Vienna, 1083, 1155). The Sabaeans, too, had extensive trade relations and settlements, for example, in Hinna, Jā, al-Qatīf, and Jāwān in eastern Arabia, in Petra, and in Meroë. Inscriptions in the Wadi Hammamat prove that they did not hesitate to sail across the Red Sea to Egypt (A. Grohmann, *Südarabien als Wirtschaftsgebiet*, II, Vienna, 1933, pp. 121, 123; R. LeB. Bowen, *The Early Arabian Necropolis of Ain Jawan, A Pre-Islamic and Early Islamic Site at the Persian Gulf, BAMSOR*, Supplementary Studies, 7-9, 1950, pp. 235).

The first armed conflicts between Ma'in and Saba' involved questions of territorial possessions and interference with the caravans on the incense route; the aggressors were the Sabaeans (ca. 420 and 343 B.C.). The predecessor of the Sabaean priest-king Karib'il Watar pushed to the south and subjected Qatabān; Karib'il himself conquered Ma'in and Hadhramaut, destroyed the powerful kingdom of Awsān, which had acquired the East African coast down to Zanzibar as its colonial possession, and thus founded the first Sabaean empire. But a few decades after these great successes, Sabaean power came to an end. Qatabān then held the original Awsān territory as far as the straits of Bab el Mandeb, at least down to the time of Eratosthenes (ca. 225 B.C.), and even extended its conquests northward as far as Marib, the Sabaean capital. About 90 B.C., it also reduced to vassalage Ma'in, to the north of Saba'. Rome took advantage of the unfavorable situation of Saba' to launch a large-scale attack on southern Arabia under Aelius Gallus (25-24 B.C.), which was, however, repelled with heavy losses. In the meantime Hadhramaut had destroyed Qatabān (ca. 25 B.C.). The conflict that later broke out between the two rivals lasted for several centuries, until Hadhramaut, under King Shammar Yuḥar'ish, was conquered by Saba' (ca. 325), and a second Sabaean empire was created, which extended not only as far as Nejrān in the north (which was incidentally contested by Mar' al-Qais, "King of all the Arabs") but also deep into central Arabia and perhaps as far as eastern Arabia, which was subject to Shapur II of Persia (A.D. 310-79).

In the meantime a new and terrible enemy of the Sabaean empire had appeared: the Ethiopians (Habashāt), successors of the Sabaean colonists who had originally, in the 5th and 4th centuries B.C., occupied the highlands of Tigre, starting from Sabaean provinces situated opposite Eritrea, and later created the Aksum empire. As early as the 3d century B.C. an Aksumite king, in order to put down piracy at the northern end of the Red Sea, had occupied parts of the Hejaz and of Asir. After the death of Shammar Yuḥar'ish, the Ethiopians, between A.D. 335 and 378, occupied all southern Arabia. By 400, southern Arabia was once again seemingly a great independent power, but this was achieved at the price of recognition of the Bedouin element, which had come into contact with the Sabaean peasant population in the large crescent formed by the Saiḥad desert and the Rub' al-Khali and seems to have been incorporated in it. This, however, meant the beginning of the end: the nomads always represented danger. After A.D. 516 the tribal confederacy of the Kinda conquered the Hadhramaut kingdom, and in 525 a new Abyssinian invasion finished off the Sabaean kingdom, which then became a vassal state of the Aksum empire, conquered by its own former African colony. For a decade the Sabaean princes ruled as vassals, but then southern Arabia came under the direct control of relatively independent Ethiopian viceroys, such as Abraha. Under these viceroys the great dam of Marib burst in 542 but was repaired; then, sometime before 570, the dam broke down once and for all. This had the effect of destroying the central nucleus of the Sabaean territory and forced a number of tribes of southern Arabia to emigrate. In 575 the Sabaeans succeeded for the last time in shaking off the Ethiopian yoke with Persian help, but this led to the incorporation of southern Arabia into the Persian empire as a satrapy in 598. It was only the southward advance of Islam in A.D. 628 that freed the entire southwestern corner of Arabia as far as Mahra and added this region to the young Moslem commonwealth.

The tribes around Medina as well as those of central Arabia, Bahrain, Oman, and Yemen attempted to throw off the new hegemony, but their defection was quickly and vigorously repressed, and concentrated Arab strength was mobilized for the great wars of conquest against Byzantium and Persia. Within a short time the Arabs became masters of the entire eastern and southern Mediterranean basin, including Spain. But already under the Abbasside dynasty, separatist tendencies began to assert themselves, at first in Oman, where al-Julandā ibn Mas'ūd of the Azd tribe, which had been settled there by the Sassanid Ardashīr I (d. A.D. 241), attempted to found an independent imamate as leader of the Kharijite sect. After an initial reverse in 725 he was successful a short time later, and the imamate endured for four centuries. In Yemen, where

separatist tendencies sprang not only from 'Alid propaganda but also from the ancient antagonism between northern and southern Arabia, based partly on race and partly on memories of the former splendor of the empires of southern Arabia. Muhammad ibn Zaid in 820 founded the Ziyadite kingdom, which remained nominally dependent on the caliphate of Baghdad. After the death of the caliph al-Mutawakkil (A.D. 861), a native dynasty, the Yafurids, founded a kingdom in the highlands of Yemen with their capital at Sana'a; Hadhramaut also became independent of Baghdad. In central Arabia an independent state was founded by the Hasanid Muhammad ibn Yūsuf al-Ukhaidir in Yamāna, which succumbed only to the Karmathians.

The Karmathian variety of Ismailian sectarianism, which also made itself felt in Yemen in A.D. 879-880 but was put down by the Zaidite imam al-Hādī Yahya in 893, was able in 899 to found a strong state in eastern Arabia with a center at al-Hasa, which soon proceeded to attack the caliphate at Baghdad. In 930 Mecca itself was sacked, and shortly afterward Oman was conquered, only to be lost again in 985-6. The middle of the 10th century marked the foundation of the independent sherifate of Mecca and a Shiite emirate in Medina. The successes of Shiite propaganda touched off a countermovement of orthodox Islamism, led by the Seljuk Turks. A Seljuk in Kerman even conquered Oman, but Yemen remained in the hands of the Ismailians and the Zaidite imams, until the victory of the Ayubids in 1173 resulted in the occupation of Yemen and the conquest of Hadhramaut. The Ayubid rule in Yemen was followed, from 1228 to 1446, by that of the Rasulids residing in Ta'izz and Zabid, the most brilliant dynasty in medieval Yemen, which furthered art and science and favored the development of splendid original architecture. Between 1229 and 1250 their power extended from Mecca to Hadhramaut, and after the fall of Baghdad the dynasty even laid claim to the caliphate, a claim maintained to this day by the ruler of Yemen.

Under the Turkish sultans Selim I and Suleiman the Magnificent, large parts of Arabia fell to the Ottoman empire — in eastern Arabia, al-Qatif, Bahrain, and al-Hasa, and in addition parts of Yemen with Aden as well as Masqat in Oman. But Bahrain was conquered in 1602 by the Persian shah Abbas I, and the Turks were driven out of Yemen in 1635 and from al-Hasa in 1663-64. The puritan reformation led by Muhammad ibn 'Abd al-Wahhāb in the Nejd in 1741 resulted in the foundation of an Arab state under the leadership of the Ibn Saud family. At the end of the 18th century this state extended as far as Mecca and the Persian Gulf, including Oman, and threatened even Syria and Iraq; it was defeated, however, in 1818 by Muhammad Ali's armies and virtually destroyed. British intervention led to a kind of protectorate in the Persian Gulf and the occupation of Aden (1839). Wahabite power gained a new foothold in central Arabia (Riyadh) but soon afterward lost the Nejd to the rival dynasty of the Shammar prince Ibn Rashid, while Turkey again established itself at the Persian Gulf and in Yemen. A long struggle between Ibn Saud and Ibn Rashid came to an end in 1902 with the reconquest of Riyadh by the Saudi Abd-al-Aziz, and in 1913 the Turks were driven out of al-Hasa with the silent acquiescence of England. During World War I Ibn Saud did not openly join England but observed a friendly neutrality after 1917, while Al-Husain ibn 'Ali, the shērīf of Mecca, on the basis of far-reaching agreements with England regarding the foundation of a great Arab empire under his leadership, rose against Turkey in 1916 and contributed decisively to the collapse of the Palestinian and Iraqi fronts of the Central Powers. In Yemen, too, the Turks managed only with difficulty to hold out against the Zaidite imam Yahya ibn Hamid al-Din, until they definitively lost Arabia following the defeat of the Central Powers. At this point Ibn Saud was able not only to eliminate his old adversary Ibn Rashid as a political factor in the Nejd and occupy Hail in 1921 but also, in 1924, to wrest the Hejaz with the holy cities from the shērīf, whose sons Abdullah and Faisal received from England the newly founded kingdoms of Jordan and Iraq. In 1926 Ibn Saud also occupied Asir, and in 1934 he waged war against the imam Yahya ibn Hamid al-Din, conquering the oasis of Nejrān. This completed the political partition of Arabia, except for some minor points of controversy. The present configuration is as follows:

The northwestern boundary is constituted by Jordan, Iraq, and Kuwait. To the south Saudi Arabia adjoins it along the line formed by 'Aqaba, Dhat, and al-Hajj and includes the Nejd proper (Riyadh) with Qasim and Jebel Shammar, al-Hasa (Hufhūf), Asir (Abhā), and Hejaz (Mecca). On the Persian Gulf are al-Qatar, Bahrain, Masqat, and Oman, which encompasses the whole coast, including Dhofār (Zafār). Toward the west they border on Hadhramaut and Aden, and between these and Nejrān lies Yemen.

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GENERAL FEATURES AND PREHISTORIC ART. In the light of the foregoing discussion of the climate and habitability of Arabia, it is clear that art and, more generally, advanced civilization will not be found in nomad tents but will make their appearance only under stable, sedentary conditions, principally in the southwestern corner of Arabia, in the region extending from Yemen to Hadhramaut, including the eastern outpost of the incense region of Dhofār, which today belongs to Oman. This culture is a self-contained unit and in many respects is comparable to that of Babylonia and Egypt, both of which stimulated and influenced it in various ways. On the basis of such influences, we may suppose that in many fields, such as religion and architecture, a closer relationship may have obtained in a very early period, which unfortunately today cannot be traced farther back. Thus southern Arabian art is less the product of specific influences than an evolved style of clearly marked originality, characterized by a strong sense of symmetry and balance, as may be seen both in the medieval mosques and in the massive temples, fortified cities, and river dams. This sense of symmetry and balance likewise characterizes the script that was used in southern Arabia, which also represents an original development side by side with other Semitic scripts, and which, as a wall and relief ornament, is capable of producing an esthetic effect equaled by few other scripts.

The particular form of art developed in southern Arabia has a special significance within the framework of Near Eastern art. We may have here, to use Fritz Hommel's expression, a missing link, whose importance for the time being seems problematic only because we are occasionally perplexed as to dates. But whether the earliest Minaean and Sabaeen monuments are assigned to the 7th or 8th century, the fact remains that such perfection in the fashioning of stone and the technique of building presupposes centuries of experience and points to contacts with far earlier cultures, such as those of ancient Anatolia, Crete, Egypt, and Babylonia. Even the sculptures disclose a certain originality, but here, too, we are aware of strong impulses primarily from Hellenistic art and even of Indian and

Persian influences. We might be able to evaluate this "missing link" far more accurately if thorough archaeological investigations were possible on the spot. Unfortunately such investigations do not seem to be in prospect in the near future, a fact that is all the more regrettable because promising attempts, such as the excavations in el-Huqqa by Rathjens and Von Wissmann, those of the American expedition of Wendell Phillips in Marib, and those of W. P. Albright in al-Beld and Khôr Rôri (Dhofâr) and around Timna', have shown what valuable results may be expected from such undertakings. However, in view of the extensive territory covered by ancient ruins, these excavations, important as they may be, are only a beginning, and Freya Stark's statement that southern Arabia is a country in which the archaeologist still has everything ahead of him remains valid (CY, LXXXVII, 1936, p. 114). Under these circumstances, the present sketch of southern Arabian art must be regarded as provisional.

The other regions of Arabia are of minor importance as compared with the Yemen-Hadhrâmut zone. However, the oases of the Hejaz and eastern Arabia, with their springs, also disclose an art that is to some extent original, although that of the Hejaz is strongly influenced by the art of the Nabataeans. Thus an art history of the Arabian Peninsula must take account of three distinct areas: (1) the northwestern area south of Ma'in, extending to the southern border of Nejrân (Hejaz and Asir), which was under Aramaic influence; (2) the area of southern Arabia, highly developed culturally, extending from the southern border of Nejrân to include Yemen, the Aden Protectorate, and Dhofâr; and (3) the eastern Arabian area (al-Hasa and Bahrein) influenced by Mesopotamia and Persia (see ARABIAN PRE-ISLAMIC ART).

Before discussing these in greater detail, it is necessary to glance at the prehistoric era, for here, too, we ascertain an original development or, at any rate, a high artistic level on Arabian soil.

The prehistoric man of the Middle and Old Paleolithic ages roamed as a hunter from Jebel Anaiza in Jordan across Palmyra, Saudi Arabia, and Iraq to the Anatolian highland and Kurdistan, eastward to the Iranian plateau, and southward to the Wadi Sirhân, Petra, and the Sinai Peninsula. Unfortunately, the study of the prehistory of Arabia is still in its beginnings. For a long time it was confined chiefly to accidental discoveries and individual explorations, for example, those of the geologists and engineers of the Aramco, although many scholars have done systematic, scientific work in this field: R. LeBaron Bowen, G. Caton-Thompson, P. B. Cornwall, H. Field, N. Glueck, G. Horsfield, S. A. Huzayyin, W. H. Ingrams, H. T. Norris, H. St. J. B. Philby, C. Rathjens, Freya Stark, W. Thesiger, and H. von Wissmann. However, since the German Frobenius expedition to southern Jordan under H. Rothert (1934-35) inaugurated the prehistoric explorations of this region, and since the Danish archaeological expedition under P. V. Glob of the Prehistoric Museum at Aarhus, in a series of successive campaigns beginning in 1953, worked in Bahrein and the surrounding territories, valuable material has been uncovered. For example, various parts of the paths followed by the prehistoric hunters are indicated by the finds at Kilwa (Jordan), which range from Old Paleolithic and Neo-Paleolithic to Mesolithic (8000-6000 B.C.) and represent a special form of the "Kilwa" culture. Further individual finds came from Hâiz in Hamdân, northern Yemen (a nephrite wedge and a drill); from Lahej, northeast of Aden; from al-Dawâdaml, Yabrin, and Tell el-Hibr in the Nejd (flint tools); from Shaqqat el-Khareita in the desert of Rub'al-Khali (neolithic tools, including some of obsidian); from Wadi Markhah, Meshed, and Gaybûn in the Wadi Dô'an; from Sune and Hureidha in the Wadi 'Amd; and the Wadi Qubhudh in Hadhrâmut. A hand ax in nephrite was found far to the east in Dhofâr. On the Persian Gulf there are prehistoric sites in the province of al-Hasa, the Qatar peninsula, and above all, on the island of Bahrein, with its numerous Paleolithic and Neolithic sites, which, like some pieces from Kilwa, point to contacts with the Indian Sohan culture. Hand axes are absent in Hadhrâmut, the piece found by S. A. Huzayyin in Yemen being an importation; and the Levallois tools are crude in comparison with those of Africa, northern Arabia, and Palestine, probably as a result of lack of contacts with the advanced culture of these regions. On the other hand, it is noteworthy that the microlithic obsidian tools from Gaybûn, which Caton-Thompson dates from the 2d millennium B.C., show an affinity with the later microlithic obsidian tools in Kenya, but according to the finds in the tombs of Hureidha they were still in use in the 6th century B.C. The northernmost point seems to lie in Palmyra, with finds from the oldest Paleolithic Age to the Bronze Age, which once again are reminiscent of Kilwa.

Here it may be noted that nephrite tools, for example, have been found in places as distant from one another as Hâiz (northern Yemen) and Dhofâr (southeastern coast of Arabia, in Oman), although this type of stone does not occur in Arabia; consequently we must regard them as importations. But the most important creations of these prehistoric hunters of the Mesolithic period are

unquestionably the rock engravings of Kilwa, on the road from Amman to Taima, at the foot of a hill of the Jebel Tuwayq, which was inhabited, with long interruptions, from the Paleolithic period (Natufian I, ca. 8000-6000 B.C.) through the Chalcolithic (approximately the first half of the 4th millennium B.C.), again in the early centuries of the Christian era, and for the last time about A.D. 1000. Kilwa was discovered in 1932 by G. Horsfield and N. Glueck, who assigned to the Stone Age the rock images on the mountain named for the first of these explorers. The animal most often represented is the ibex, which later came to represent the moon god in the religion of ancient southern Arabia. The finest specimen of the ibex pictures, which, like all others, are shown in profile and in punched-out lines ($\frac{1}{8}$ to $\frac{1}{4}$ in. wide and in places as much as $\frac{3}{8}$ in. deep), is no doubt the head of the ibex of Mount Horsfield (H. Rothert, *Transjordanien, vorgeschichtliche Forschungen*, Stuttgart, 1938, p. 164, fig. 1); another ibex (Rothert, op. cit., p. 152 and pl. 10 top) probably represents the most ancient engraving. Other animals are also represented—oxen, wild cats, dogs, lizards, ichneumon flies, dromedaries. The presence of representations of the dromedary in the Paleolithic style is important (Rothert, op. cit., p. 224, no. 1) and, in the light of other indications, especially the finds of the early dynastic Egyptian style, suggests that this animal, indispensable for transportation over great distances, was known in the Near East far earlier than had been assumed. But of special importance is the representation of a tightly embracing human couple (Rothert, op. cit., pl. 22, pp. 181-3) on the southern slope of Mount Horsfield, to which the closest parallel is the Natufian statuette from the Wadi Khareitûn near Jerusalem. Other indications, too, confirm the impression that the art of the rock drawings of Kilwa and the art of the Natufian caverns in Palestine (ca. 8000-6000 B.C.) belong to one cultural domain. Individual animal drawings of much more recent date were found also in el-Quweira, $1\frac{1}{4}$ miles from the Ma'an-'Aqaba road, by Rothert (op. cit., pl. 1, fig. 6, p. 8; pl. 27, fig. 28, p. 232, fig. 1, p. 222), as well as in the Wadi Râm (Arâm, Rum, Ramm), 25 miles east of 'Aqaba (op. cit., p. 41). From the artistic point of view, they mark essentially a regression to the primitive, as is disclosed by the later rock engravings from historical times scattered all over Arabia. They belong to an entirely different style that is found everywhere, like the so-called Thamudic scripts accompanying them. This late primitive art has nothing in common with that of Kilwa.

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NORTHWESTERN ARABIA. If we disregard Kilwa and the jebel and valley of Râm (Aram; in inscriptions, 'rm), this region contains primarily monuments dating from historical times.

Pre-Islamic period. Taima. This is the earliest center of the region. The oasis owes its existence to two springs and to the water of several torrents, which collects in a basin; it probably existed as early as the 7th century B.C. Taima lies on a branch of the old caravan route, which, as a lateral extension of the incense route, led to the Persian Gulf and was mentioned in the reign of Tiglath-pileser III (733 B.C.). King Nabonidus, who for eight years located his capital there, built in Taima a large palace similar to the one in Babylon, probably in the southern part of the present-day oasis, where the ancient city rose on an elevation. At the highest point of this field of ruins, the Jebel Junaim, whose ramparts are partly preserved and whose circumference is nearly two miles long, stood a temple, from which the Aramaic stele C/IS II, no. 113, datable from the 5th century B.C., probably comes. Its style is rather Assyrian, although the name of the person who erected it suggests Egyptian influence. On a rock wall near a large water reservoir in the vicinity of al-Khabû al-Sharqi we find, among Thamudic

graffiti, figures of animals of a more recent style, including a camel in bas-relief, which reveals the hand of an accomplished artist; it may date from the 2d century B.C. In the neighborhood of Taima there are curious grave mounds; they are round, constructed in step form, covered with layers of stone, and crowned with rectangular constructions that served as tombstones; the dead were buried in the hill itself. The step arrangement may have been suggested by the Egyptian step pyramids or the Babylonian ziggurat, but unfortunately the age of these monuments cannot be determined. The castle of Samau'al, still partly preserved, dates from the time of the Judaic settlement.

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Dedan (el-'Ulā) and Hejrā. Dedan is a younger oasis than Taima, on the great trade route that connected southern Arabia with Syria and Egypt. According to the testimony of the prophet Ezekiel (27:20), Dedan supplied Tyre with "precious cloths for chariots." Toward the end of the 5th century B.C. the Minaeans founded a colony here; the city (*ddn* in inscriptions) contained many-storied houses (an architectural type still characteristic of southern Arabia), a temple of Wadd (the chief Minaean god), and a necropolis in near-by Kherybe. Minaean art is attested here by the lions in half relief guarding the entrance of a Minaean grave (A2, J. Jausen and R. Savignac, *Mission archéologique en Arabie*, III, Paris, 1922, pl. XXXIV, II, 1914, p. 72, fig. 22), which strongly remind us of the well-known Gate of Lions of Bogazköy; in addition, there is a waterspout fallen from the cornice of a building, which recalls Anatolian examples (Zincirli and Malatya, 9th-8th cent. B.C.) because of a row of ostriches within a triangular space (zigzag pattern) and a double-row arrangement of ibexes. Both the zigzag-patterned frame and the alignment of ibexes obviously refer to the ancient model of Ma'in (M. Tawfiq, *Atār Ma'in fi Jawf al-Yaman*, Publications de l'Institut français d'archéologie orientale du Caire, *Etudes Sud-arabiques*, I, 1951, fig. 27, p. 21 and pl. XV, fig. 25). The Minaean rule of Dedan and Wadi al-Qurā, which had progressively declined since about 160 B.C., was succeeded in 115 B.C. by that of the Lihyanites, who ruled until shortly before 9 B.C. That they maintained relations with both Egypt and the Nabataeans in Syria is shown by the style of their sculptures in the round discovered in the Kherybe necropolis, some of which represent Lihyanite kings and which were presumably influenced by Egyptian artists of the last Ptolemaic period as well as by the Syrian artistic tradition. They probably date from the beginning of the 1st century B.C. About 9 B.C., the Nabataeans conquered the oasis of Dedan; previously, in 65 B.C., they had occupied the oasis of Hejrā (*hgr'*, el-Hijr, today Madā'in Sālih; Hagra, Hegra, Hagra in Pliny, *Naturalis Historia*, VI, 156, 157; *Ἡγρα* in Ptolemy, VI, 7, 29; Stephanus of Byzantium; Strabo, XVI, 782), which had also been founded by the Minaeans. With the conquerors there appeared the typically Nabataean style, above all in the façades of the mausoleums cut in the rocks of the el-Hijr necropolis, dating from 1 B.C. to A.D. 75, which imitate house fronts. They are closely related to the syncretic art of Petra, which elaborates Assyrian and Egyptian motifs, but they disclose in their almost baroque capitals a new, local creation, of which there is no example in Petra. It is noteworthy that the inscriptions repeatedly mention the names of architects and sculptors, all Nabataeans although some had Greek names, such as Karinu (Καρῖνος) (CIS, II, 288). Also noteworthy is the *bēṣl* in the form of an anthropomorphic stele with round head and raised, outstretched arms, the closest parallel to which is found in Rām (Jausen and Savignac, *Mission archéologique en Arabie*, I, Paris, 1909, p. 410 ff.). The decorative application of the refined Nabataean script, perhaps in imitation of a southern Arabian model, is beautifully exemplified in the sun clock of Hejrā (Madā'in Sālih; Jausen and Savignac, op. cit., I, p. 303, fig. 113).

The principal sanctuary of Hejrā is the large, almost rectangular hall now called "diwan," which is cut in the rocks of the Jebel Ethlib (Jausen and Savignac, op. cit., I, p. 405 ff., figs. 77, 78, 199) and which is reminiscent of similar monuments in Petra (el-Mēr, el-Madrāa).

The short second Lihyanite epoch, which succeeded that of Nabataean rule, shows no notable artistic achievements. The tomb A1,

which dates from that epoch (Jausen and Savignac, op. cit., III, pl. XXXV), is but a crude imitation of the Minaean tomb A2. This epoch is obviously one of artistic and cultural decline.

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Rām (Arām, 'rm; Ptolemy, VI, 7, 27, Ἀράμνα). Another old settlement occupied by the Arabs as early as the reign of King Uzziyah (779-740 B.C.) is Rām. It constitutes the northern frontier of the Hejaz; it lay on the pilgrim road from Elath to Medina and in antiquity was the first stage in Arabia Felix on the road from Madyan to Petra. Actually, five Minaean inscriptions, among others were found there. The most important structure is the temple of the goddess Allat near the spring 'Ain Shellale on the Jebel Rām (Ramm): it consists of a rectangular hall with an aedicula at the center. The ample colonnaded entrance is reminiscent of the rock temple in Hejrā and similar religious structures of the Nabataeans. The temple was built in the first half of the 2d century with the help of Nabataean artisans and matches in all its detail the traditional architecture of Petra. It is a classic example of the Hellenization of Nabataean architecture; also characteristic are the numerous Greek inscriptions and a Latin one on a stone altar. As for statues, a stele related to the *bēṣl* found in Hejrā, as well as a figure of a divinity with a serpent, were discovered. According to al-Qazwini, several other statues were there at an earlier time.

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Ruwāfa. In 1910, A. Musil discovered at Ruwāfa another rectangular temple with a well in front, unfortunately ruined, presumably dating from A.D. 166-169. The bilingual (Greco-Nabataean) epigraph, also poorly preserved, on the architrave of the portal, which Musil and H. St. J. B. Philby copied and stereotyped, is a dedicatory inscription wishing long life to the emperors Marcus Aurelius and Lucius Verus. Later Philby discovered an unfinished mausoleum façade of the usual Nabataean type in the Wadi Qurayqir, together with a group of tombs cut in the sandstone.

BIBLIOG. A. Musil, *The Northern Hejaz*, New York, 1926, pp. 184-88, figs. 70, 71, and a sketch of the temple, p. 188, fig. 72; H. St. J. B. Philby, *The Lost Ruins of Qurayra*, *GJ*, CXVII, 1951, fig., p. 452, bottom; H. St. J. B. Philby, *The Land of Midian*, *The Middle East J.*, IX, 2, 1955, pp. 127-28.

The rectangular structure that Philby discovered in 1951 in the extensive ruins of Qurayra, which lies 45 miles northwest of Tabūk, may also have been a temple (cf. H. St. J. B. Philby, *The Lost Ruins of Qurayra*, *GJ*, CXVII, 1951, pp. 448, 458, esp. pp. 454-55). Still another temple is probably the Qasr Qurayyim Sa'id, on the left bank of the Wadi el-Hamq, south of the port of Wejh, where Philby discovered a number of architectural pieces and ornamented fragments. Philby supposes that both temples are stylistically related to the temple of Ruwāfa (cf. *The Middle East J.*, IX, 2, 1955, p. 127; Burton, *The Land of Midian Revisited*, I, London, 1879, p. 103; B. Moritz, *Ausflüge in der Arabia Petraea*, *Mémoires de la Faculté Orientale*, Beirut, III, 1908, pp. 406, 408, no. 13, pl. VII, 2; A. Kammerer, *Petra et la Nabatène*, Paris, 1929, pp. 32, 202). Finally, special mention must be made of the façade of a mausoleum in the necropolis of Mugayyir Shu'ayb west-southwest of Hawrā in the territory of Midian, because the capital of a column flanking the entrance represents an interesting intermediate stage in the development of the ornamentation of the Near Eastern column capital, the so-called "Cyprian palmetto," toward the Aeolian-Ionian capital (cf. A. Musil, *The Northern Hejaz*, New York, 1926, pp. 109, 113, fig. 43).

Of other local pre-Islamic shrines, such as 'Okāz, Wajj, Taif, Dū 'l-Majāz, Majanna, and the Ka'ba of Banu Ghatafan and Khalaqa, we have only the names (cf. H. Lammens, *Les sanctuaires préislamites dans l'Arabie occidentale*, *Mémoires de l'Univ. St. Joseph*, XI, 1926, pp. 115 n. 5, 117, 150, 151). Only the Ka'ba of Mecca has been preserved to this day, though in a restored form.

Mecca (Makka). The city was once the center of a complicated network of trade routes leading to the Mesopotamian delta on the Persian Gulf, into Yemen, Syria, and Eritrea; after the decline of the Himyarite empire in southern Arabia it was the greatest and most powerful city of Arabia, despite its unfavorable climatic situation. Mecca may be the Macoraba mentioned by Ptolemy; but the town had no doubt existed at an earlier time as a rest station and place of transshipment on the incense route. The main shrine of the city was the Ka'ba, "the cube," a rectangular enclosing wall without a roof, built without mortar, which surrounded the well of Zemzem. In A.D. 608 extensive restoration was carried out by a Greek or Coptic builder. The most remarkable aspect of this restoration was the adoption of the ancient technique of building by alternating layers of wood and stone, known to us from the old Ethiopian churches of the 9th and 10th centuries, which seem to imitate the gigantic steles of Aksum, dating from the 4th century. In addition, the simply ornamented stone beams protruding from the walls, which C. Rathjens saw at Shibām (Kawkabān), resemble the so-called "monkey heads" known to us from Ethiopia and prove the existence of a technique of wood and stone construction in southern Arabia. Thus, what we are confronted with is an ancient southern Arabian technique reapplied in Mecca; in addition, the ground plan and the use of three successive pairs of columns are in keeping with a tradition of ancient southern Arabia, and, more generally, of the ancient Orient.

BIBLIOG. H. Lammens, *La Mecque à la veille de l'Hégire*, Mém. de l'Université St. Joseph, Beirut, IX, 3, 1923-24, pp. 118-28 ff., 143-45, 149, 182-86, 205, 282-301, 315; H. Lammens, *Les sanctuaires préislamites de l'Arabie occidentale*, Mém. de l'Université St. Joseph, Beirut, XI, 1926, pp. 51, 79; K. A. C. Creswell, *The Ka'ba in A.D. 608*, *Archaeol.*, XCIV, 1951, pp. 97-102; C. Rathjens, *Sabaea*, Bericht über die archäologischen Ergebnisse seiner zweiten, dritten und vierten Reise nach Südarabien, I, Der Reisebericht, Mitteilungen aus dem Museum für Völkerkunde in Hamburg, XXIV, 1955, pp. 103-05.

In Asir, only occasional specimens of sculpture were discovered at Maidi, on the coast south of the port of Jizan, and to the east of it in Haradh (cf. R. Forbes [Mrs. McGrath], *A Visit to the Idriai Territory in Asir and Yemen*, GJ, LXII, 1923, p. 278).

In Saudi Arabia south of Asir lies the extraordinarily fertile oasis of Nejrān (Ptolemy, VI, 7, 36, Νέγρα; *Inscriften der Sammlung E. Glaser in der Ak. der Wissenschaft*, Vienna, 418-19, l. 3; 1000 A, l. 20, *agru*; Ammianus Marcellinus, XXIII, 47, Nagara; Strabo, XV, 781, Νεγρών, 782, Νέγρα; Pliny, *Naturalis Historia*, VI, 160, Negrana), which was important as a junction on a branch of the caravan road through the Wadi Dawasir and Yamāma to the Persian Gulf and Babylonia. Its capital, today Medina, or el-Ukhūd, was visited by Philby and the Belgian expedition under G. Ryckmans; we do not know its ancient name, which may have been Ragmat (Glaser, 418-19, l. 3, 1155, l. 2), and it may be the place referred to in the Bible as 'Pēṣūz and Ramah. The best-known religious building here was the Ka'ba of Nejrān, which al-Hamdānī mentions in *Iklil*, VIII, and in his description of the Arabian Peninsula. It is there depicted as a high, square structure with a dome, reached by a staircase, as was the Ka'ba in Mecca, as restored in 808. There is no mention of columns, and it is noteworthy that according to Ibn al-Kalbi's *Book of Idols* the structure served only as a meeting place. H. St. J. B. Philby found, on the eastern side of Jebel Taslāl, a street, still partially paved, which forms a wide half-circle around a large basalt rock. The smooth, slanting surface of this rock still bears the traces of a figure, and traces of color are still discernible. Toward the eastern end of the Taslāl hill there is a rectangular space surrounded by stone blocks, which Philby presumes to have been the temenos of a temple, though there are no traces of a structure. Adjoining it is a massive rectangular building, a castle or palace, with projections along the northern and southern sides; the main entrance is in the northwestern corner of the city. Philby believes that the building dates from the early Minaean epoch. The projections that articulate the walls indicate that it is ancient. As for the Ka'ba mentioned by al-Hamdānī, it is probably not the building that Philby takes it to be, even though it is certain that it was a sacred structure. The closest parallel to it is provided by the so-called "Conway High Place" in Petra, which W. F. Albright uncovered in 1934 and in which a circular paved processional street surrounds the sacred rock, situated at the highest point of the walled city. It was used from the 1st century or earlier until the Christian era, and a procession around the sacred stone (*tawāf*) was part of the ritual of the typically Arab litholatry. It included a procession around the Ka'ba in Mecca as well as the earlier procession around the Rock of David in the Dome of the Rock (Qubbat al-Shakhra) in Jerusalem. With Nejrān, however, we reach the southern boundary of this form of Arab worship, which came to an end when Christianity penetrated the area in the 5th century. Artistic activities in Nejrān are also evidenced by very noteworthy finds, such as a fine head of a lion in bronze, as well as the fragments

of a roof tile and the remains of a gargoyle, probably from a temple, now in the British Museum.

BIBLIOG. A. Grohmann, *Nagran*, RE, XVI, 2, s.v. Negrān, cols. 1574-76; N. Rhodokanakis, *Altabäische Texte*, I, SbWien, CCVI, 2, 1927, pp. 6, 116-18; W. F. Albright, *The Archaeology of Palestine and the Bible*, New York, 1932, pp. 161-63; al-Hamdānī, *Iklil*, VIII, ed. Nabih Amin Fāris Princeton, 1938, p. 83, trans. p. 47; H. St. J. B. Philby, *The Land of Sheba*, GJ, XCII, 1938, pls. facing pp. 4, 5, 13, pls. p. 8, 13; L. Forrer, *Südarabien nach al-Hamdānī's Beschreibung der arabischen Halbinsel*, Leipzig, 1943, p. 218 and n. 2; K. S. Twitchell, *Saudi Arabia*, Princeton, 1947, p. 77 and pl. facing p. 67; H. St. J. B. Philby, *Arabian Highlands*, Ithaca, 1952, p. 255 ff., figs. 23, 24, and pp. 266, 269, 308-9; H. von Wissmann, and M. Höfner, *Beiträge zur historischen Geographie des vorislamischen Südarabien*, Abhandlungen der Geistes- und Sozialwissenschaftlichen Klasse, 1952, no. 4, pp. 9-11.

Islamic period. Yathrib. An important city on the incense route, Yathrib later became Medina (Ἰαδρίππα, Stephanus of Byzantium; Ptolemy, VI, 7, 31, *Yṯrb* in inscriptions). In its population a predominant part was played by two southern Arabian tribes, in addition to the Jews previously settled there. It was situated somewhat to the north of the present city, in a palm oasis. As might have been expected, no pre-Islamic sacred sites have been preserved, but the mosque built in 706 with the help of Greek and Coptic masons, which was later remodeled and restored several times and severely damaged by a fire in 1256, has remained the most important edifice in the city. In its oldest form, it became the model for the great mosques in the cities founded by the Moslems in the period of conquests. Its present, very changed form dates from the reign of the Turkish sultan Abdul-Medjid, 1853-54.

BIBLIOG. J. Tkač, *Iathrippa*, RE, IX, 1914, cols. 791-1800; F. Buhl, *E. de l'Islam*, s.v. al-Madina, III, 1936, pp. 88-98; R. H. Kiernan, *The Unveiling of Arabia*, London, 1937.

Gedda. In the port city of Gedda (Jidda) a charming house style has asserted itself in the course of several centuries. It seems to be influenced by the best Egyptian tradition of the Mameluke period: houses of several stories with balconies of the Mashrabiyya type on the side turned to the sea. (K. S. Twitchell, *Saudi Arabia*, Princeton, 1947, pp. 66-7; T. E. Lawrence, *Seven Pillars of Wisdom*, London, 1935, fig. facing p. 72).

A particular form of structure characteristic of this province is found in the cities of Asir. In Tihama, round straw huts, shaped like a Tartar helmet and typical of the coastal plain, are common. There are also clay houses and large buildings with sloping walls, in which brickwork alternates with layers of slate leaves; these jut out far downward, thus protecting the clay walls from heavy downpours. This type of architecture is obviously local and functional. Particularly striking are the tall round towers with twenty or more layers of slate leaves — for example, in Abhā — which rest on stone foundations. They remind one of pagodas, but they are certainly examples of the ancient southern Arabian technique of house building.

BIBLIOG. K. S. Twitchell, *Saudi Arabia*, Princeton, 1947, figs., pp. 66, 67; W. Thesiger, *A Journey through the Tihama, the 'Asir and the Hijaz Mountains*, GJ, CX, 1948, pp. 190, 194, figs. pp. 194, 195; H. St. J. B. Philby, *Arabian Highlands*, Ithaca, 1952, p. 139 and fig. p. 160; C. Ryckmans, *La trace de Saba en Arabie séoudite*, *Revue du Monde*, 1952, no. 5, fig. p. 8, and the fifth illustration following.

Nejrān, too, has an architectural curiosity: the five-story stone palace of the Makarima in Khushaiwa, with a stone outer wall and round towers at the corners. In this case the design was apparently inspired by the east Roman type of the *castellum*, of which there are numerous examples in Transjordan (e.g., Qasr Harāne, Qasr al-Hayr el-Garbi, etc.; H. St. J. B. Philby, *Arabian Highlands*, Ithaca, 1952, pp. 283, 284, fig. 28).

SOUTHERN ARABIA. Ma'in. South of the oasis of Nejrān and adjacent to it is the Minaean Jawf, now called Jawf ibn Nāsir. It is irrigated by the perennial river al-Khārid and was formerly, with the plain of Saba', one of the most fertile oases of southern Arabia.

Qarnāwu. Jawf is the central region of the Minaean empire, whose capital Qarnāwu (*qrnw* in inscriptions; Carnon, Carnus, in Pliny, *Naturalis Historia*, 154, 157) lies about 5 miles east of el-Hazm on an artificial terrace 50 ft. high, at an altitude of 1,800 ft. above sea level. According to M. Tawfiq's measurements, it may originally have covered an area of about 25,000 acres and had a population of 3,000. Today it is called Kharibet Ma'in, from the ancient name of the country. The ancient city lies in ruins, and in recent years much building material has been removed from it and used elsewhere. In the northern quarter of the city lie the ruins of a temple built of blocks of limestone (A. Fakhry, *An Archaeological Journey to Yemen*, March-May, 1947, *Services des Antiquités de l'Égypte*, I, Cairo, 1952,

fig. 104). The principal entrance leads first into a courtyard adjoining the sanctuary, with two parallel rows of three square pillars each; but this does not divide the space into three aisles, for the pillars stand close to the walls. The analogy with the Ka'ba of Mecca or the Temple of Balata in northern Palestine is thus confined to the number of the columns, which incidentally is also the same in the Temple of Rôbât (Dhofâr). On the other hand, their disposition more or less close to the walls is typical of the Minaean region. In the neighborhood of the temple there are two others, whose flat stone roofs still emerge from the rubble. But the most important structure is the Athar temple *extra muros*, on a low ridge in the plain, about half a mile northwest of the eastern gate of the old city; it was built between 550 and 450 B.C. The ancient name of the temple was Rašf (rpf); today it is called al-'Uraiah. Three rows of powerful limestone square pillars, covered by blocks of the same material, form the monumental vestibule, decorated with interesting low reliefs similar to those of Harim. This vestibule leads into the sanctuary, as in the temple just mentioned, but the pillars are farther removed from the enclosure (Fakhry, op. cit., I, fig. 105). According to Fakhry, the more massive construction recalls the valley temple of the second pyramid of Giza and the Temple of Osiris in Abydos but was not necessarily influenced by the architecture of Egypt.

Harim. Farther to the west is Harim (*hrm* in inscriptions), now Kharibet Al 'Ali, on the river al-Khârid, near el-Hazm. Here, too, there were at least two temples in the center of the town and two smaller ones at its northern edge. Again, the largest temple is situated beyond the city walls in the plain, about 1,000 ft. northwest of the settlement of the Al 'Ali. It consisted of a portal 13 ft. high, built of large granite blocks decorated with reliefs, of which one still stands erect and the others are lying on the ground. This entrance leads through a narrow hall to a second one and then to a wide courtyard where numerous steles and altars were set up (Fakhry, op. cit., III, pl. LXIB). From Harim we also have a bronze vessel with an inscription (Glaser, 325).

al-Sawdâ. There follows, close to the right bank of the Khârid, the ruined al-Sawdâ (*Nadân* in inscriptions), in which only a few columns indicate the sites of temples; here too, about 1,300 ft. east of the city ruins, lie the ruins of a temple of Athar. Al-Sawdâ is particularly important as the presumed site of the discovery of two very curious clay statuettes. Sir Leonard Woolley compared one of them to very similar statuettes from al-'Ubaid, Arpachiya, and Tell Halâf, but more striking parallels are found in Rhodes, from the post-Mycenaean era (12th and 11th centuries B.C.). As for the other statuette, C. Rathjens had previously attributed it to the Aegean cultural domain, and W. F. Albright dates it from before 2000 B.C.

El-Beidhâ (*Natq*, *nîq* in inscriptions; *Náσκος*, *Nάσκα*, Strabo, XVI, 782; Pliny, *Naturalis Historia*, VI, 154, 160 Nascus and Nesca; Ammianus Marcellinus XXIII, 6, 47 Nascos). Noteworthy as the site of excavation of various decorative objects (necklaces and bracelets, cups, clay statuettes, clay and terra-cotta pottery, bronze works, funeral steles, etc.). Its ruins lie on the left bank of the Khârid.

Berlîqish. South of Qarnâwu lie the ruins of Berlîqish (in inscriptions *Yatîl ytl*, the *Ἀθλοῦλα* of Strabo, XVI, 782). From the city temple in the southern quarter there still emerge from the rubble the tops of the powerful monolithic square "piers" with a superimposed roof of large stone blocks; the remnants of another great temple, which was later used as a mosque, are found in the northeastern part of the city.

Remains of other temple structures are found in Kharibet Su'ûd and Kharibet al-Duraib (in inscriptions, *ktl*, *katal*), all destroyed by earthquakes and the subsequent removal of material. Nevertheless, Philby found in Kharibet al-Duraib a fine large fragment of a frieze that must have been part of a temple.

BIBLIOG. H. St. J. B. Philby, *The Land of Sheba*, GJ, XCII, 1938, pp. 125-27; A. Fakhry, *Les antiquités du Yémen, un voyage à Sirwâh, Mârib, et El-Gôf*, Le Muséon, LXI, 1948, pp. 211, 222, and pl. II bottom; C. Rathjens, *Kulturelle Einflüsse in Südwestarabien von den ältesten Zeiten bis zum Islam, unter besonderer Berücksichtigung des Hellenismus*, Jhb. für Kleinasiatische Forsch., I, 1950, pp. 16, 17, fig. 2; Muhammad Tawfiq, *Āṣār Ma' in fī Gawf al-Yaman*, Publications de l'Institut français d'Archéologie orientale du Caire, Etudes Sud-arabiques, I, 1951, pp. 3, 4, 15-23, fig. 27, pl. II (plan of the city and of the temple of Athar), VIII, fig. 11, IX, fig. 12, 13, XIV, fig. 23, XV, fig. 25; A. Fakhry, *An Archaeological Journey to Yemen* (Mar.-May, 1947), Service des Antiquités de l'Égypte, I, Cairo, 1952, pp. 90, 100, 104, 105, 140-53, III, 1951, pls. LIV, LIX, LXIB, LXII, LXIII; H. von Wissmann and M. Höfner, *Beiträge zur historischen Geographie des vorislamischen Südarabiens*, Abh. der Geistes- und Sozialwissenschaftlichen Klasse, 1952, no. 4, pp. 143-44, 231; C. Rathjens, *Die Weihrauchstrasse in Arabien*, *Tribus*, Jhb. des Lindenmus., 1952, 1953, pp. 286-88, fig. 1; H. von Wissmann, *Geographische Grundlagen und Früh-*

zeit der Geschichte Südarabiens, Saeculum, IV, 1, 1953, p. 79, figs. 9, 10; C. Rathjens, *Sabaeica*, Mit. aus dem Mus. für Völkerkunde in Hamburg, XXIV, 1955, pp. 50, 58, 60, figs. 139, 144.

Saba'. a. Pre-Islamic period. South of the Jawf ibn Nâqir lies the central nucleus of the Sabaeen empire, the large oases, irrigated by rainwater streams, of the plain of Saba', with its capital Marib.

Marib. Situated at an altitude of 3,800 ft., this city today consists of a number of mounds of rubble, but originally it must have covered an area of about 0.4 square mile. In inscriptions its name appears in the forms *Mribe* and *mr̄b*, and it is referred to by classical authors as *Μαρίαβα*, *Mariaba* (Stephanus of Byzantium, s.v.; Strabo, XVI, 768, 778, 782). Of the temple of the lunar god in the city, only eight colossal monolithic columns remain standing, against which the mosque was built. As in Ma'in (Qarnâwu), the principal sanctuary lies about three miles southwest of the city. In inscriptions it is called *Awwâm* (*'wam*), and today it is *Haram* or *Mahram Bilqis*. The sanctuary proper, the oldest structure, dating from the 8th century B.C., is an elliptical kidney-shaped structure of about 980 ft. in perimeter. The main entrance to the elliptical enclosure on the north-eastern side, whose interior has not yet been excavated, passes through a magnificent peristyle with a triple door, which is a later addition, dating from about the 5th century B.C. It leads into an exterior courtyard and an adjacent complex of buildings, ending in a row of eight monolithic piers 14 ft. high. On the southeastern side a small square mausoleum abuts the oval enclosure of the ellipse. About a mile from *Haram Bilqis* there is another small temple, called *Bar'an* (*br'n* in inscriptions), and *el-'Amā'id* ("the columns") by the natives; five monoliths 26 to 29 ft. high are still standing.

There can be no doubt that these Sabaeen shrines differ substantially from the sacred structures in Ma'in (Qarnâwu) both in ground plan and in construction. The great elliptical wall is itself unique as to form, if we disregard the oval structure at Qerôsa in the Wadi 'Adim (seen by L. Hirsch), the nature of which is still unclear. C. Rathjens and H. von Wissmann pointed to a striking similarity to the elliptical structure of Zimbabwe in Rhodesia and inferred from this fact an early colonial connection between southern Arabia and East Africa. But the dating of the structures in Zimbabwe is controversial; they were presumably erected in the early Middle Ages or between the 5th and 7th centuries; thus they were built 1,200 to 1,400 years later than the time *Haram Bilqis* was erected. From an objective point of view it would thus be more natural to connect this oval arrangement with the round house and round churches in Ethiopia, for example at Debra Damo (6th century), although here, too, there is a long time interval. Fortunately, however, the excavations at al-'Ubaid and Khafaje show us unambiguously enough where the closest parallels may be expected; and the excavations undertaken by the Danish archaeological expedition on the island of Bahrein uncovered (Feb.-Mar., 1956) the foundations of a temple at Barbar which seems to be in every respect a counterpart of the *Haram Bilqis* temple. Here the main temple is preceded by an asymmetrical oval 19½ to 27½ in. thick and 3 ft., 5 in. high; from this oval a ramp leads up to the temple. The oval dates from the same period as Temple II, from the middle of the 3d millennium B.C. The close connection with the southern Babylonian temples seems proved by the very fact that the gods Sin and Nin-Khursag were probably worshiped also in Dilmun (Bahrein), while the lunar god Sin, here as in Hadhramaut, enables us to establish a connection with the temple of Awwâm, dedicated to the lunar god Almaqah. In this context, the ancient southern Arabian inscriptions discovered on the old caravan route from the Nejrân to the Persian Gulf acquire a particular importance: they show by what way the oval type of ancient Babylonian sacred structure reached southern Arabia, probably together with the worship of the lunar god Sin. The fact that this name of the lunar god was preserved only in Hadhramaut, while it gave way to other younger names in Saba', Ma'in, and Qatabân, is connected with the internal development of southern Arabian religion but is not at all incompatible with the existence of early religious relations with Babylonia and with Bahrein, which was influenced by Babylonia. It is thus all the more regrettable that the oval of *Haram Bilqis* could not be excavated by the Wendell Phillips expedition, for only this would have told us whether this oval, too, like the one at Barbar, leads to a higher sanctuary, or whether it encloses that sanctuary, as at al-'Ubaid and Khafaje.

The gigantic work of the famous dam of Marib, a masterpiece of ancient southern Arabian hydraulic engineering, can merely be mentioned here. From the city of Marib and its immediate surroundings, we have numerous small finds as well as architectural fragments, marble statues of bulls, heads of bulls in bronze, terra-cotta statuettes, altars, portraits of heads from funerary steles, and, above all, bronze statuettes. The most important piece is a bronze statue 36½ in. high of a Sabaeen with a lion or panther skin on his back, dating

from the 7th century B.C. (PL. 330; see ARABIAN PRE-ISLAMIC ART). It is a typical southern Arabian product and cannot possibly be regarded as a borrowing from Greek culture. This is also true of two other bronze statues discovered in the temple of Marib: the rumpled folds of the apron on one of them are slightly reminiscent of Hellenistic models, but they are rendered rather clumsily, and in conjunction with the treatment of the hair and the awkward pose point to a southern Arabian artist.

BIBLIOG. J. Tkač, RE, II, 1, s.v. Saba, cols. 1323, 1324, 1355, 1357; G. Caton-Thompson, *The Zimbabwe Culture: Ruins and Reactions*, Oxford, pp. 86, 187, pl. XXVII; A. Grohmann, E. de l'Islam, s.v. Ma'rib, III, 1936, pp. 304-18; A. Fakhry, *Les antiquités du Yémen, un voyage à Sirwāh, Mārib et el-Gōf, Le Muséon*, LXI, 1948, pp. 219-21; F. P. Albright, *The Excavations at the Temple of the Moon at Mārib (Yemen)*, BAMSOR, 128, 1952, pp. 25-38; W. F. Albright, *Notes on the Temple 'Awwām and the Archaic Bronze Statue*, BAMSOR, 128, 1952, pp. 38-39; A. Fakhry, *An Archaeological Journey to Yemen (Mar.-May, 1947)*, *Service des Antiquités de l'Égypte*, I, Cairo, 1952, pp. 80-91, 93, III, 1951, pls. XXXII, XXXIV-XXXVII, XL-XLIII, XLVII-LI; H. von Wissmann and M. Höfner, *Beiträge zur historischen Geographie des vorislamischen Südarabiens*, Abh. der Geistes- und Sozialwissenschaftlichen Klasse, 1952, no. 4, pp. 131, 134; A. Jamme, *A Bronze Statue from Marib, Yemen*, Sc. Monthly, LXXVI, 1, 1953, pp. 33-5; H. von Wissmann, *Geographische Grundlagen und Frühzeit der Geschichte Südarabiens*, Saeculum, IV, 1, 1953, pp. 75-8; W. Phillips, *Oqabān and Sheba. Exploring Ancient Kingdoms on the Biblical Spice Routes of Arabia*, London, 1955, pp. 203, 204, 226, 234, 237, 256-62, 267, 268, figs. facing pp. 213, 224, 225, 254, 256-58, 272, 273, 276, 277, 285; B. Segall, *The Arts and King Nabonidus*, AJA, LIX, 1955, p. 317; P. Mortensen, *Barbar templets ovale anlag*, Kuml, 1956, pp. 180-98 (fig. 1, p. 189; fig. 2, p. 190); R. LeB. Bowen, F. P. Albright, *Archaeological Discoveries in South Arabia*, Baltimore, 1958.

Sirwāh. More ancient and apparently more important than Marib is the great field of ruins situated west of it, Sirwāh (845 × 780 ft.), which was explored by Ahmed Fakhry. The principal shrine here is the great Temple of Almaqah, a rectangular structure about 34 ft. high with an apsidal termination at the eastern side, which is the most important building of the ancient field of ruins now called el-Khariba. In front of the old main entrance on the west side there probably was a propylaeum. The temple, part of which is well preserved, was erected in the 8th century B.C. In addition to the principal temple there are the ruins of at least four others, all of them rectangular and some provided with propylaea.

BIBLIOG. A. Fakhry, *Les antiquités du Yémen, Le Muséon*, LXXI, 1948, pp. 217, 218, pl. 1; A. Fakhry, *An Archaeological Journey to Yemen (Mar.-May, 1947)*, *Service des Antiquités de l'Égypte*, I, Cairo, 1952, pp. 10, 29-33, 51, III, 1951, pls. II-IV, VI, VII, IX, X, XI, XIV, XVII, XVIII; H. von Wissmann, *Geographische Grundlagen und Frühzeit der Geschichte Südarabiens*, Saeculum, IV, 1, 1953, p. 77 and fig. 5.

el-Mesājid. About 9 to 12 miles southwest of Marib there is the ruined site of el-Mesājid, with a large temple, described as elliptical, which is called in inscriptions Ma'rib (m'rb), and which also dates from the 8th century B.C. The site has not yet been photographed, but it has yielded various artistically noteworthy reliefs with vines, grape leaves, and grapes, somewhat similar to Palmyrian designs; their fine execution points to the best period of Hellenistic-influenced Sabaeen art, perhaps the early period of the Roman empire. A relief with a galloping bull is artistically inferior to those with vine motifs and may date from the Byzantine-Roman period.

BIBLIOG. E. Glaser, *Reise nach Mārib*, Sammlung E. Glaser, I, Vienna, 1913, p. 142; C. Rathjens, *Kulturelle Einflüsse in Südwestarabien von den ältesten Zeiten bis zum Islam, unter besonderer Berücksichtigung des Hellenismus*, Jhb. für Kleinasiatische Forsch., I, 1950, pl. III, fig. 12; H. von Wissmann and M. Höfner, *Beiträge zur historischen Geographie des vorislamischen Südarabiens*, Abh. der Geistes- und Sozialwissenschaftlichen Klasse, 1952, no. 4, pp. 30-31; C. Rathjens, *Sabaeica*, II, *Die unlokalisierten Funde*, Mit. aus dem Mus. für Völkerkunde in Hamburg, XXIV, 1955, photos 253-57 (pp. 221-22), 421 (p. 252), 472 (p. 261).

Sūda. In the highland of central Yemen west of Ma'in and Saba', Sūda is the site of excavation of painted pottery, clay statuettes, ancestor images in limestone, bronze figures, and reliefs.

BIBLIOG. C. Rathjens, *Sabaeica*, II, *Die unlokalisierten Funde*, Mit. aus dem Mus. für Völkerkunde in Hamburg, XXIV, 1955, pp. 156, 179, 185, 187, 195-230, 233, 240, 243, 257, 268, 276-78, 282, 293-300, 304, 306, 307.

Sirwāh (Arhab). Here E. Glaser photographed a rectangular temple that has an important place in Sabaeen religious architecture. One wall of the enclosure, cut by two gates on the longer side, contains a water basin, open and surrounded by columns, situated in front of the sanctuary. The latter was obviously roofed, as shown by the positions of the columns. But what is noteworthy in this structure are the niches, one of which, in the northwestern wall of the sanctuary, is open and was obviously intended to hold a statue;

but there is also a second one behind it in the enclosure wall, as well as a third outside on the southeastern side of the enclosure, whose purpose and significance are completely unknown. The ground plan, however, shows a certain similarity to the type of mosque with a courtyard.

BIBLIOG. E. Glaser, *Reise nach Zafār*, I, fols. 11v, 12v; E. Glaser, *Geographische Forschungen in Yemen*, f. 103 (manuscript); D. Nielsen, *Handbuch der altarabischen Altertumskunde*, Copenhagen, I, 1927, p. 154, fig. 42; C. Rathjens and H. von Wissmann, *Vorislamische Altertümer*, Hamburg, 1932, pp. 67, 68, and fig. 33.

Nā'it. West of Sirwāh we find Nā'it (n'fm in inscriptions), in which there are the ruins of a temple. S. A. Huzayyin undertook a casual excavation there in 1936, about which the details are unknown. Only two columns are still erect among large columns lying on the ground. Their disposition and type of technical elaboration is, according to Huzayyin, probably derived from Ptolemaic Egypt.

BIBLIOG. S. A. Huzayyin, *Bi'rat al-Gami 'a 'l-misriyya ilā 'l-Yaman wa-Hadramawt*, B. of the Faculty of Arts, Univ. of Cairo, IV, 2, 1936, p. 100. Concerning a relief found there: H. Y. Nāmi, *Naṣr nuqūṣ al-misriyya qadima min ḡunūb bilād al-'Arab wa-ṣarḡuhā*, Cairo, 1943, p. 9.

el-Huqqa. We are well informed about the plan of another temple, excavated in 1928 at el-Huqqa, west of Nā'it, by C. Rathjens and H. von Wissmann. A square court surrounded by columns, adjoined by two buildings and containing a wellhead, leads by way of a flight of stairs crowned by a propylaeum to the sanctuary; however, the sanctuary is not enclosed within a rectangular wall, as at Sirwāh (Arhab), but protrudes to one side. The temple must have been built between 100 B.C. and A.D. 100, or perhaps earlier. The excavation brought to light numerous architectural pieces, bronzes, ornaments, and pottery.

BIBLIOG. C. Rathjens and H. von Wissmann, *Vorislamische Altertümer*, Hamburg, 1932, pp. 13-17; H. von Wissmann, *Geographische Grundlagen und Frühzeit der Geschichte Südarabiens*, Saeculum, 1, 1953, pp. 82, 83.

Amran. West of el-Huqqa lies Amran (m'm in inscriptions), which was known earlier from an important find of Sabaeen bronze tables but which has also yielded other bronze objects, notably a beautiful late-Hellenistic putto, and architectural parts.

BIBLIOG. CIH, IV, 1, pls. XIII-XVII; C. Rathjens, *Kulturelle Einflüsse in Südwestarabien von den ältesten Zeiten bis zum Islam, unter besonderer Berücksichtigung des Hellenismus*, Jhb. für Kleinasiatische Forsch., I, 1950, p. 39 and pl. II, fig. 17; C. Rathjens, *Sabaeica*, I, *Der Reisebericht*, Mit. aus dem Mus. für Völkerkunde in Hamburg, XXIV, 1955, pp. 30-4, 133, photo 9, II, p. 244, photos 385-86.

A curious bronze tablet was discovered at al-Jāhiliyya in Hamḍān (cf. Nielsen, *Handbuch der altarabischen Altertumskunde*, Copenhagen, 1927, I, p. 173 and fig. 71); various architectural pieces, animal reliefs, and other remains were found at el-Gerā, Beyt Gufr, and Shibām (Kawkabān) (C. Rathjens, *Sabaeica*, I, *Der Reisebericht*, Mit. aus dem Mus. für Völkerkunde in Hamburg, XXIV, 1955, p. 101, figs. 107-9, p. 102, fig. 110; C. Rathjens and H. von Wissmann, *Vorislamische Altertümer*, pp. 105-8, 111, 114, 115, figs. 61, 73, 75-77, 78, photo 63, p. 131, figs. 89, 90, p. 134, fig. 91, p. 136, fig. 84). We may further mention Hāz, whence come the prehistoric tools and architectural pieces in relief of the Near Eastern Department of the Berlin museum (C. Rathjens, *Sabaeica*, II, *Die unlokalisierten Funde*, Mit. aus dem Mus. für Völkerkunde in Hamburg, XXIV, 1955, p. 148, figs. 232-35; C. Rathjens and H. von Wissmann, *Vorislamische Altertümer*, pp. 100, 101, 102, photos 59, 60, pp. 107-10, figs. 62-72, p. 113, photo 67, pp. 118, 119, fig. 68, p. 120, photos 72, 73).

San'a. Southwest of Hāz there rises the present capital of Yemen, San'a. It is mentioned in inscriptions relatively late, under King Iṣharakh Yaḥdub, A.D. 25 (Inchriften der Sammlung Glaser in der Akademie der Wissenschaft, Vienna, 424, m'w, Ṣan'awū). Among its notable structures are the famous castle of Gumḍān and the church (Qalla) built by the Ethiopian viceroy Abraha. But almost nothing of these two structures has been preserved, and for the evaluation of their architectural form we depend on al-Hamḍānī's description (*Iḥlāl*, VIII, pp. 9, 13-22, 30) as regards the castle and on that of Yaḥut (*Mu'jam*, IV, p. 170) and of al-Azraqī (*Aḥḥab Makka*, I, pp. 83-5) as regards the church. The castle of Gumḍān, whose foundations legend attributes to Shem, son of Noah, is said to have been built by the Sabaeen king Iṣharakh Yaḥdub. It had a square ground plan and 20 stories, each about 20 ft. high; each of its four walls was of a different colored stone material — white, black, green, and red. Access was provided by four gates, one on each side, in front of which stood copper lions with open jaws, which roared when the wind blew into them. The castle was destroyed in the year 11 of the Hegira (A.D. 632). The church, Qalla (ἐκκλησία), built after A.D. 530 by

Abraha, probably stood at the site now occupied by the great mosque. It was also square, 120 ft. high, and built of stone of various colors; every two layers of stone alternated with a layer of wooden beams whose round heads protruded 2 ft. from the wall; in other words, the type of structure is the same as that of the Ka'ba. The sanctuary measured about 160 × 80 ft.; adjacent to it was a hall 80 ft. long, which led to a domed structure. The church was destroyed between the years 134 and 140 of the Hegira (A.D. 751-58). The purpose of the structure called Gurjet el-Qalla, near the ramparts of the old city and a short distance from the southern city gate (Bab el-Yamen) is unclear. It consists of a round wall of air-dried bricks, 6½ ft. high, without a gate; the area it encloses has a diameter of 65 ft. According to local tradition, it is the remnant of a church built by Bishop Theophilus about A.D. 350; Glaser believes that this was the church of Abraha; C. Rathjens thinks it was a baptistery of more recent date. Columns with curious capitals, perhaps dating from the late Sabaeen period or the time of the Ethiopian occupation, can be observed in a pre-Islamic *funduq*. San'a is also known as an excavation site of various southern Arabian antiquities, for example, a beautiful marble statue in the Greek style, 3 ft. high, which was discovered in a garden and smashed by fanatics.

BIBLIOG. E. Glaser, *CIÖ*, IV, 1, pp. 1-4, pl. I; E. Osiander, *Zur himyaritischen Altertums- und Sprachkunde*, ZMG, X, 1856, p. 26; C. Rathjens and H. von Wissmann, *Vorislamische Altertümer*, Hamburg, 1932, pp. 72, 186, fig. 136; al-Hamdānī, *Sifa*, trans. Forrer, pp. 11, 276; al-Hamdānī, *Ikhl*, VIII, ed. N. A. Fārīs, Princeton, 1940, pp. 3-5, 10-19, 21, 34, trans. pp. 9, 13, 22, 30; C. Rathjens, *Sabaica*, I, *Der Reisebericht*, Mit. aus dem Mus. für Völkerkunde in Hamburg, XXIV, 1955, pp. 40, 41, 120, figs. 128-31.

Gaymān. About eight miles southeast of San'a are the ruins of Gaymān (*aymān* in inscriptions), where numerous architectural pieces, reliefs, capitals, bronzes, and fragments of bronze statues were found, many of high quality. The tomb of King Abkarib As'ad (first half of the 5th century) was discovered not far from the city; from it come two heads of bronze statues, one a very good replica of a Hellenistic statue, the other apparently influenced by Persian art.

BIBLIOG. H. Schlobies, *Forsch. und Fortschritte*, X, 1934, col. 242, fig. 1; C. Rathjens, *Kulturelle Einflüsse in Südwestarabien von den ältesten Zeiten bis zum Islam*, unter besonderer Berücksichtigung des Hellenismus, *Jhb. für Kleinasiat. Forsch.*, I, 1950, pl. II, fig. 13; H. von Wissmann and M. Höfner, *Beiträge zur historischen Geographie des vorislamischen Südarabiens*, *Abh. der Geistes- und Sozialwissenschaftlichen Klasse*, 1954, no. 4, p. 40; C. Rathjens, *Sabaica*, II, *Die unlokalisierten Funde*, Mit. aus dem Mus. für Völkerkunde in Hamburg, XXIV, 1955, p. 61, fig. 41, p. 62, fig. 43, pp. 66-7, figs. 57-60, p. 70, fig. 64, p. 73, figs. 68, 69, p. 70, fig. 70, p. 143, fig. 225, p. 245, pls. 387-93, p. 256, photos 451, 452, p. 262, photo 479.

Silā. South of Gaymān we find, on the Jebel Karim, the ancient settlement of Silā, today Nahlet el-Hamrā', with the tomb of the last Sabaeen king, Dhū Nuwās (d. A.D. 525); two oversized bronze statues of naked Negroes, assigned to the 2d century, were found there. There are also ruins of four structures with fluted columns, whose purpose is unclear.

BIBLIOG. C. Rathjens, *Kulturelle Einflüsse in Südwestarabien von den ältesten Zeiten bis zum Islam*, unter besonderer Berücksichtigung des Hellenismus, *Jhb. für Kleinasiat. Forsch.*, I, 1950, p. 34, pl. III, fig. 14; C. Rathjens, *Sabaica*, I, *Der Reisebericht*, pp. 153-56, photos 67-76, II, *Die unlokalisierten Funde*, Mit. aus dem Mus. für Völkerkunde in Hamburg, XXIV, 1955, p. 246, photos 394-96.

Zafār. Almost nothing seems to have been preserved of the doubtless important buildings of the more recent capital, Zafār. Architectural pieces with ogive windows, and Ethiopian monograms which Eduard Glaser found immured in the mosque of Menkat near Yerfm, obviously come from the church built there by the bishop Theophilus about A.D. 354. This shows that the church still existed during the first and second Ethiopian occupation of Yemen (ca. A.D. 370-78 and 525-75). To this church, too, belongs a fine Corinthian capital with rosettes between reversed acanthus leaves with the ribs of the leaves in relief, a feature significant for the evolution of this type of capital, and probably influenced by Syrian art (cf. D. Nielsen, *Handbuch der arabischen Altertumskunde*, Copenhagen, 1927, I, p. 148, fig. 37, p. 149, fig. 38). Zafār was also the source of the collection of Sabaeen antiquities assembled by Mutaṣarrif Mahmūd Bey in San'a, including a splendid running gazelle (*Inschriften der Sammlung E. Glaser in der Akademie der Wissenschaft*, Vienna, 358), a votive gift to the god Athar (A. Grohmann, *Göttersymbole und Symboltiere auf Südarabischen Denkmälern*, Vienna, 1914, p. 64, fig. 167).

b. *Islamic period*. San'a. Among the medieval structures in Yemen we must first of all mention the great mosque at San'a, which, according to local tradition, was originally a Sabaeen temple. The structure called the Ka'ba, in the mosque courtyard, may date from

the pre-Islamic era. The mosque itself belongs to the type of mosque with a courtyard which C. Rathjens and H. von Wissmann would relate to the Sabaeen temple at el-Huqqa. The columns surrounding the courtyard certainly date from the pre-Islamic period but presumably were transported there from looted sites. The reliefs on the rear wall, which C. Rathjens regards as pre-Islamic, probably date from the first century of the Moslem era, and the pair of confronted rock pigeons are reminiscent of the decorative use of pigeons in the palace of Caliph Hishām, at Khirbet el-Mafjar near Jericho. Thorough investigation and excavation will be necessary before the question of the age of this mosque can be answered.

BIBLIOG. C. Rathjens and H. von Wissmann, *Vorislamische Altertümer*, Hamburg, 1932, pp. 72-4, p. 63 (photo 20), p. 73, fig. 35 (plan); C. Rathjens, *Kulturelle Einflüsse in Südwestarabien von den ältesten Zeiten bis zum Islam*, unter besonderer Berücksichtigung des Hellenismus, *Jhb. für Kleinasiat. Forsch.*, I, 1950, p. 38, fig. 15; C. Rathjens, *Sabaica*, I, *Der Reisebericht*, Mit. aus dem Mus. für Völkerkunde in Hamburg, XXIV, 1955, pp. 41-4, figs. 33, 34.

Dhamār. The funerary mosque of Dhamār, with its vast dome covering almost the entire square structure, is striking for the triangular divisions of the two bands ornamenting its façade. They at once bring to mind Mesopotamia and even more, as E. Diez observes in a letter, the façade of Mshattā. This does not, however, necessarily point to the influence of these two cultures, for alignments of triangles are also found at the end of a Sabaeen inscription in the Ethnographic Museum in Hamburg (*Orientalia*, VI, 1937, p. 309; C. Rathjens, *Sabaica*, II, p. 225, photos 207, 268).

The mosque of el-Jened is remarkable for its tall octagonal minaret, that of Ta'izz (el-Muzaffariyya), for the façade richly articulated with tall vertical slits and the beautiful minarets reminiscent of the Fatimid mosques. Although these mosques of Yemen fit into the architectural style of the rest of the Moslem world, they reveal a distinct local variation which secures for them a special place in Moslem architecture. This is also true of the stone houses, often of five or more stories, with beautiful façades and round or pointed arched windows, reminiscent of the old Venetian palaces on the Grand Canal (cf. E. Mittwoch, *Aus dem Yemen: Hermann Burchard's letzte Reise durch Südarabien*, Leipzig, n.d., pls. IV, XV, XVIII, XIX; R. H. Sanger, *The Arabian Peninsula*, New York, 1954, fig. facing p. 256).

Qatabān. South of the Sabaeen empire was that of Qatabān (Καταβαῖνα in Strabo, *Geographica*, XVI, 768; Κριβαῖνα in Theophrastus, *Natural History of Plants*, 9, 4, 2).

Timna'. The capital, Timna' — today Kohlan — on the left bank of Wadi Beihān, was rediscovered by G. W. Bury as early as 1900. The conditions for scientific excavation were far more favorable than in Yemen, and the American expedition under Wendell Phillips in 1950-52 was able to achieve considerable results for the archaeology of southern Arabia. Previously, R. A. B. Hamilton had found alabaster statues there; then there was discovered a rectangular temple of a plan similar to that of el-Huqqa. Built in the 7th century B.C., it was rebuilt several times in the 6th, 3d, and 1st centuries B.C. and enlarged by additional structures. In a private house, two finely worked bronze lions with Eros riders were discovered (pl. 330); they probably date from about 75 to 50 B.C. and were perhaps copied from a Greek original imported from Egypt. In another house was found a bronze statue of a woman on a stone base, dating from the middle of the 1st century B.C., which clearly reveals Hellenistic influence; and near it was found a quantity of terra sigillata with the name of the master, Leontes. Two other bronze statues, excavated by robbers, also come from one of the rich Hellenistic houses near the southern gate of Timna'. One represents a winged deity, perhaps Dionysos Sabazios, and is certainly an importation; the other, a Qatabān woman, is a curious mixture of Hellenistic and Oriental stylistic elements. The necropolis of Timna', about 2,500 ft. from the city and called today Haid ibn 'Aqil, yielded a Hellenistic statue of Isis (1st century B.C.), an extraordinarily well-executed woman's head in alabaster, a beautiful gold necklace, and various statues of ancestors.

Hajar ibn Humeid. In this place, 8½ miles south of Timna', whose deepest archaeological stratum was settled between 1300 and 1100 B.C., is represented the most ancient cultural stage so far discovered in southern Arabia. It yielded pottery which discloses Syrian-Palestinian influences, and in addition what seems to have been a lunar temple, apparently divided into small rooms.

Hajar Hinū el-Zireir. This place became known because of a stone relief found here representing two confronted bulls (Glaser), and its important and extensive ruins promise valuable archaeological yields in the future.

Mukeiras. At three hours' journey from Im'adiyya, on the ancient caravan route from Aden to Beihān, lies Mukeiras, where was found a large, unfortunately broken, stele with a serpent in high relief.

Beihān. The ruins of the old city of Beihān yielded architectural elements (e.g., a gargoyle) and an alabaster statuette which seems to reveal Greco-Roman influence.

BIBLIOG. G. W. Bury, *The Land of Uz*, London, 1911, p. 256; S. T. Perowne, 'Im'adiya and Beihan, Aden Protectorate, Ant., XIII, 1939, pp. 135-37; R. A. B. Hamilton, *Archaeological Sites in the Western Aden Protectorate*, GJ, CI, 3, 1943, p. 116; M. Höfner, *Archiv für Orientforschung*, XVI, 1952-53, pp. 126-28, 357 ff.; W. Phillips, *Qataban and Sheba, Exploring Ancient Kingdoms on the Biblical Spice Routes of Arabia*, London, 1955, pp. 93-103, 166-73, figs. facing pp. 112, 113, 116, 117, 124, 125, 176, 177, 181, 189, 193; B. Segall, *Sculpture from Arabia Felix, The Hellenistic Period*, AJA, LIX, 1955, pp. 209-14.

Hadhramaut. The vast region that lies between the Qatabān and Hadhramaut kingdoms is almost completely unexplored archaeologically. H. St. J. B. Philby, in the course of his trip from Najrān to Shabwa in the summer of 1936, heard about an ancient city in the lower part of Wadi Markhah which had only recently come to light as a result of movements of sand, and R. A. B. Hamilton refers to the statue of a bull, presumably in gold, which a river had washed out of the ruins at al-Na'ab, in the lower district of Markhah. At the mouth of Wadi Jerdān, too, a very important find came to light in this way, the bronze statue of a Spartan hoplite of the 6th century B.C., uncovered by rains. The find is important because it clearly indicates that there had been connections between Greece and the Hadhramaut in a period much earlier than that of the Hadhramaut votive inscription on the island of Delos, which dates from the 2d century B.C.

There is a relatively well-preserved fortification in the large ruin of Naqab el-Hajar (*mif't* in inscriptions) in Wadi Maifa. In Manqa' el-Turaibit, Philby found several isolated blocks which, in his opinion, belonged to a temple of the sun. But his most important archaeological contribution was the accurate description of the ruins of the ancient Hadhramaut capital Shabwa (in inscriptions, *šbw*; *Σάββατα*, *Periplus Maris Erythraei*, 27, 31; Sabota in Pliny, *Naturalis Historia*, XII, 63), which had earlier been visited by R. A. B. Hamilton, who had even undertaken tentative excavations there.

Shabwa. Unfortunately, Shabwa is today a confusion of ruins. The most notable structures are the temple that Philby attributes to the god Athar and a compact building said to be a palace. Among the art objects originating in Shabwa the most important are a magnificent bronze lamp with the head of an ibex, of late period, and an interesting gem from the imperial era.

A small square temple and a marble statue were found southeast of Shabwa near Ma'ber, and 28 miles farther east a similar temple was found near Husn Suwaydāt. Near Bīr Hamad in Wadi Duhr lie the ruins of a city about 2,500 ft. long laterally, in which, next to abundant pottery, there was discovered a golden statuette of a horse. South of Meshed, near Gaybūn in Wadi Hajarain, lie the ruins of a square temple with a projecting portal, and northwest of it is the rectangular temple of Hureidha in Wadi 'Amd, which Caton-Thompson excavated in the winter of 1936-37. The structure, enlarged by later additions, dates from the 5th to the 3d century B.C. Exploration of the cemetery of the old city yielded pottery and prehistoric tools. Another temple, an oval, one, was discovered by L. Hirsch in Wadi 'Adim near Qerōsa.

Husn el-'Urr. In the lower Wadi Hadhramaut lie the extensive ruins of the town of Husn el-'Urr, containing a small square temple near which H. von Wissmann found a beautiful relief with vines, and a capital influenced by Sassanian art.

From the surroundings of Shibām comes also the fore part of a bronze lion, which A. Roes regards as a Hittite work but which must have been a product of southern Arabia.

The late-medieval and modern architecture of Hadhramaut is noteworthy for preserving a type of stone house of southern Arabian origin which is 10 or more stories high and surmounted by a tin-covered jutting roof, with rectangular windows and beautiful Mashra-biyya carvings. Occasionally, in Meshed for example, antique tradition has preserved the sloping walls as well as the favorite motif of steps and setbacks, particularly in gates. The minarets of the mosques do not reveal the decorative subdivision into stories which we have encountered in southern Yemen; but they do use the perforated lantern characteristic of the Fatimid and Mameluke periods (e.g., in Meshed and in al-Shihr). Here, too, a pronounced local development characterizes the architectural style.

BIBLIOG. R. Wellsted's *Reisen in Arabien*, ed. E. Rödiger, I, Halle a. S., 1842, pp. 297-303; A. Grohmann, *Göttersymbole und Symboltiere*

auf süd-arabischen Denkmälern, Vienna, 1914, p. 60, fig. 184; D. Nielsen, *Handbuch der Alt-arabischen Altertumskunde*, I, Copenhagen, 1927, pp. 158-59, fig. 47, p. 159; H. St. J. B. Philby, *The Land of Sheba*, GJ, XCII, 1938, p. 3 and pl. facing p. 4 (center), pp. 107-16, 122, pl. facing p. 111, and plan of ruins of Shabwa on map "Routes in South-West Arabia"; R. A. B. Hamilton, *Six Weeks in Shabwa*, GJ, C, 3, 1942, pp. 113-16 (plan, p. 115); R. A. B. Hamilton, *Archaeological Sites in the Western Aden Protectorate*, GJ, CI, 3, 1943, pp. 115, 116; W. H. Ingrams, *Arabia and the Isles*, London, 1943, figs. at pp. 176, 177, 192, 217; G. Caton-Thompson, *The Tombs and Moon Temple of Hureidha (Hadhramaut)*, Oxford, 1944 (Reports of the Research Committee of the Society of Antiquaries in London, no. XII); W. H. and D. Ingrams, *The Hadhramaut in Time of War*, GJ, CV, 1945, p. 6 and facing pl., center; W. H. Ingrams, *Burton Memorial Lecture*, JRAS, 1945, p. 181, pl. XVII, 1; G. Ryckmans, *Les fouilles de Hureidha (Hadhramaut)*, CRAI, 1945, pp. 230-34; H. von Wissmann and M. Höfner, *Beiträge zur historischen Geographie des vorislamischen Südarabiens*, Abh. der Geistes- und Sozialwissenschaftlichen Klasse, 1952, no. 4, pp. 101, 103, 123, 127, 128, 130, fig. 14, pp. 134, 138, 139, fig. 17, p. 138, and photo 16, pl. X; M. Höfner, *Archiv für Orientforschung*, XVI, 1952-53, p. 122 ff.; A. Roes, *Un grand bronze hittite trouvé en Arabie, Syrie*, XXX, 1953, pp. 65-71; B. Segall, *Sculpture from Arabia Felix, The Hellenistic Period*, AJA, LIX, 1955, p. 213.

Dhofār. In Dhofār, southeast of Hadhramaut, lie the ruins of the cities of al-Belid, Rūbāt, Tāqa, and Khōr Rōri. The temple ruins at al-Belid and Rūbāt were described by T. Bent. Al-Belid was a Hadhramaut colony from about the time of the birth of Christ until the 3d or 4th century; it had a rectangular temple with round columns, while at Rūbāt, octagonal columns carried a kind of ribbed arch made of stone slabs. The American expedition under F. P. Albright explored the Dhofār region in the course of several campaigns between 1935 and 1955 and brought to light, in addition to the ruined cities just mentioned, especially the ancient port of Khōr Rōri (in inscriptions, *šrm*), with a square temple of massive masonry. Notable among the bronze objects found there is the statue of a female dancer (cf. W. F. Albright, *Archaeol.*, VII, 1954, p. 254) of Indian workmanship. According to indications based on inscriptions, the settlement had been in existence at least from the 2d century B.C. The discovery of a jade hand ax has been mentioned above.

BIBLIOG. T. Bent, *Southern Arabia*, London, 1900, pp. 240, 241. C. Craufurd, *The Dofar District*, GJ, LIII, 1919, pls. pp. 101 and 104. B. Thomas, *The South-Eastern Borderlands of Rub' al Khali*, GJ, LXXIII, 3, 1929, p. 208 and facing pl., left; B. Thomas, *Arabia Felix*, London, 1932, p. 38; M. Höfner, *Archiv für Orientforschung*, XVI, 1953, p. 364; W. Phillips, *Qataban and Sheba, Exploring Ancient Kingdoms on the Biblical Spice Routes of Arabia*, London, 1955, pp. 303, 305-06, pl. facing p. 305. M. Höfner, *Archiv für Orientforschung*, XVII, 1956, p. 470.

EASTERN AND CENTRAL ARABIA. The land of Dhofār, the old center of the production of incense, which politically belongs to Oman, brings us to the vast territory of eastern Arabia, which from time immemorial has been in close contact with southwestern Arabia.

Bahrain. From an archaeological point of view, the most important part of this region is the island of Bahrain, which, judging by prehistoric finds, was settled as early as the last Glacial age in Europe, about 50,000 years ago. These finds range from the Middle Paleolithic to the Neolithic and the period of the first Babylonian dynasties. By 3100 B.C. Bahrain was an important stage on the road of the Sumerians from India to Mesopotamia; later it was also an important trading station between the Indus Valley and Mesopotamia. Finds unearthed by the Danish expedition in 1957 prove the presence of Sumerians on the island. A bronze statue of a nude male with arms crossed on the chest, from the temple of Barbar, seems to have been influenced by the Sumerian artistic tradition. Out of the nearly 100,000 funerary mounds erected between the Bronze Age (2300-1000 B.C.) and the Parthian epoch, relatively few have been explored. The most important result of the excavations, however, is the discovery of the temple near Barbar, which shows three different building stages; the oldest, with its oval enclosure wall, dating from the middle of the 3d millennium B.C., is notable for its relationship to the almost contemporaneous oval temple of Nin-Khursag at al-'Ubad and the temple of Khafaja east of Baghdad. Moreover, this temple enables us to establish a relationship with another oval temple on Arab soil, the Haram Bilqis near Marib (see above). In the Middle Ages, the island of Bahrain flowered again under the rule of the Karmathians, as evidenced by the ruins of the old mosque at Manāma from the 11th century; remnants of its rows of columns on the southern side have been preserved. The roof rests on teakwood pillars 13 ft. high, ornamented with carvings of the first Samarra style (Tulunid style). The two mihrabs contain inscriptions in rich florid Kufic. The mosque is one of the best specimens of this artistic period.

BIBLIOG. E. Diez, *Eine schiitische Moschee-Ruine auf der Insel Bahrain*, Sarre Festschrift, ed. E. Kühnel, Jhb. der asiatischen K., 1925, pp. 101-05, pls. LXXIII, LXXIV; M. Höfner, *Archiv für Orientforschung*, XV,

1945-51, p. 169; P. V. Glob, H. Andersen, Kuml, 1954, pp. 102-04, 112-14, 137, 140-53, 160-63, 1955, pp. 190-93, 1956, pp. 172-74, 186-88; H. Schmölke, Ur, Assur, und Babylon, Stuttgart, 1955, p. 9; E. Weidner, Archiv für Orientforschung, XVII, 1956, pp. 431-33; H. Field, An Anthropological Reconnaissance in the Near East, 1950, Papers of the Peabody Museum of Archaeology and Ethnology, XLVIII, 2, 1956, p. 50, n. 3.

In the province of al-Hasa on the Persian Gulf there have been many prehistoric finds, among them a remarkable 3-ft.-high limestone statue of a man excavated by P. B. Cornwall near al-Qatif. It probably comes from the island of Tarūt, where other statues also have been found. The figure wears an overcoat on top of its tunic, as is characteristic of Parthian dress; thus the statue may date from the 2d or 3d century.

In the necropolis of Jāwān, R. LeBaron Bowen found the head from a sculpture of a camel, probably of the pre-Hellenic epoch. Finds dating from the historical epoch are relatively rare compared to the far greater number of prehistoric objects, often quite important, which were discovered on the island of al-Qatar and in al-Hasa (e.g., Jebel Madra al-Shamālī, 15 miles south of al-Qatif, near Muraija and on the ar-Rudaif hill). The territory corresponding to the ancient province of al-Bahrain has at all events a special importance in historical times. According to Strabo (XVI, 766), in his lifetime the Chaldeans still had a colony in Gerrha (al-Oqair), which carried on a flourishing trade with Babylonia. Like the Sumerians before them, they migrated from eastern Arabia along the coast of the Persian Gulf and in the course of the 10th and 11th centuries B.C. penetrated into Babylonia. The script they brought with them is closely related to that of the ancient southern Arabians but is older than the oldest southern Arabian script known to us and essentially more archaic. Thus they must have been at the time in close contact with southern Arabia; perhaps the tribes that had emigrated there had originally been settled also on the Persian Gulf. This would account for many striking linguistic and cultural affinities with the Babylonians.

As compared with southern and eastern Arabia, central Arabia is relatively poor in archaeological finds. The hand ax of al-Dawādami has been mentioned earlier (see above), and a long time interval separates this Neolithic find from the fragment of a Greco-Roman alabaster statuette and an alabaster hand found 500 paces from Qasr Itra, which is about 5 miles southeast of Qaf (cf. H. Field, *Papers of the Peabody Mus.*, XLVIII, 2, 1956, p. 63).

In the field of modern architecture, in eastern and central Arabia, we can point to the city of Kuwait, actively developing at midcentury, and to the Saudi Arabian capital Riyadh, with its characteristic white turreted buildings.

BIBLIOG. P. B. Cornwall, *Ancient Arabia: Explorations in Hasa, 1940-41*, GJ, CVII, 1946, pp. 28-49, figs. 7, 8 facing p. 42, fig. 13 facing p. 45; R. LeBaron Bowen, *The Early Arabian Necropolis of Ain Jawan, a Pre-Islamic and Early Islamic Site on the Persian Gulf*, BAMSOR, Supplementary Studies, 7-9, New Haven, 1950, p. 40, fig. 21D, pp. 55, 64; W. F. Albright, *The Chaldaean Inscriptions in Proto-Arabic Script*, BAMSOR, 128, 1952, p. 44; R. Lebkicher, *The Arabia of Ibn Saud*, New York, 1925, p. 27.

NOTE. The map of Arabia (FIG. 515) was drawn from a model by Posch and Ashmann of the Institute for Geography of Innsbruck University. Information about eastern Arabia and Bahrain was kindly furnished by W. E. Mulligan and G. Rentz of the Research Center of the Arabian American Oil Company in Bahrain.

Adolf GROHMANN

Illustration. 1 fig. in text

ARABIAN PRE-ISLAMIC ART. From the beginning of historical times to the end of the 17th century the Arabian peninsula was the scene of continuous artistic and cultural development. The phases of this development were relatively unified in general pattern but somewhat different in character from those of the ancient Near East (see ASIA, WEST: ANCIENT ART). This is due, on the one hand, to the variety of influences prevailing in Arabia, some of these in the later period being of Hellenistic origin (see HELLENISTIC ART), and, on the other, to the extension of this art into neighboring regions and its relations with other areas outside the orbit of Near Eastern culture. (For connections with East Africa, see also ETHIOPIAN ART.) The natural boundary on the west, south, and east is the sea, and as the northern boundary we may take an imaginary line running along the Euphrates as far as the heights of Sura and then following roughly the ancient Roman outer limes south of Palmyra to ancient Bostra, Philadelphia, al-Qastal,

Adruh, and eventually Elath (Aila, near 'Aqaba) on the Gulf of 'Aqaba. The cities of Palmyra and Petra, which belong artistically to the Syro-Palestinian area, will not be dealt with here.

The pre-Islamic art and architecture of Arabia may be categorized according to three geographical sectors: northwestern Arabia, southwestern Arabia, and eastern Arabia. Because of limited and fragmentary documentation, the analytical approach has sometimes been found necessary in this discussion.

SUMMARY. Northwestern Arabia (col. 538): *Architecture; Sculpture*. Southwestern Arabia (col. 541): *Architecture; a. Technique; b. Religious architecture; Sculpture; Minor arts*. Eastern Arabia (col. 561).

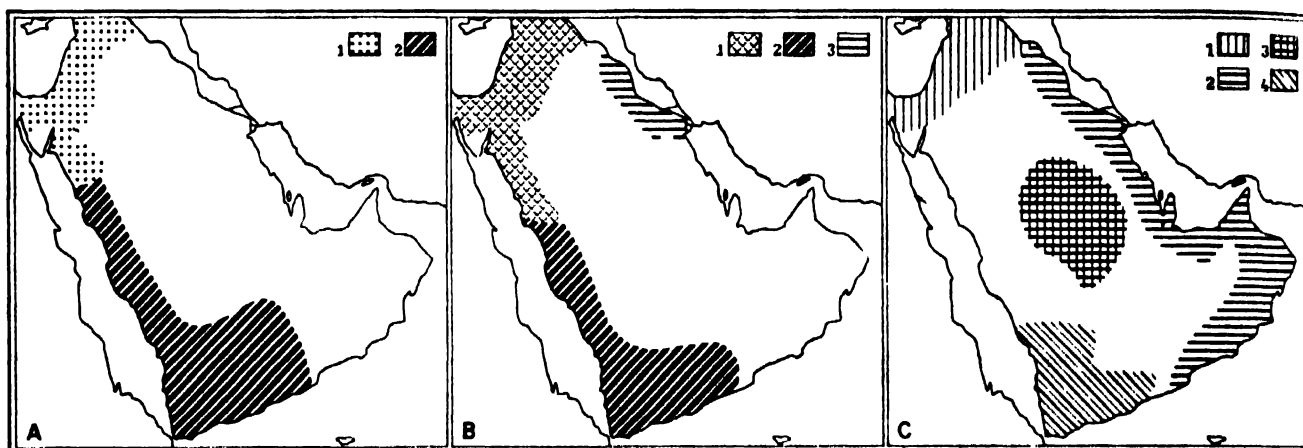
NORTHWESTERN ARABIA. Architecture. The area is distinguished by its interesting examples of the Romano-Nabataean style. The best preserved of these is a temple situated in the center of the Jebel Rām plateau and dating from the middle of the 2d century. It consists of a rectangular hall (42 ft., 8 in. × 36 ft., 1 in.) open to the east, with a cella (16 ft., 2½ in. × 13 ft., 5 in.) whose floor is 27 in. higher than the rest of the temple. The hall is enclosed by a wall with engaged columns and there are rooms on three sides of the rectangle: two to the south and north and two to the east, separated by a passage, as well as another room that originally adjoined the door. In two of the corners are staircases, built round a square pier, which led to a second story (FIG. 551). For greater strength the foundation walls were bound together with beams and joists. Inside, the columns and walls are stuccoed, the columns being fluted and the walls covered with a thick layer of banded polychromy. In the spaces between the engaged columns is a series of elongated rectangles covered with leaf ornamentation, each framed at the base by ovals forming a garland pattern. On the inner side of the north wall there is an altar and a *bētil* — a stone cube placed on a plinth and surmounted by a cornice. There was a votive altar near one of the staircases and, a few yards farther on, a larger altar, for libations or sacrifices, bearing a Latin inscription. The temple was probably dedicated to the great goddess Allat, later called Allat of Iram (cf. R. Savignac, *Le sanctuaire d'Allat à Iram*, RBib, XLI, 1932, p. 581 ff. and XLIII, 1934, p. 572 ff.; R. Savignac and G. Horsfield, *Le temple de Ramm*, RBib, XLIV, 1935, pp. 245-78). Her coarsely worked *bētil*, with the features of the face merely suggested, is still preserved; the torso rests on a socle with the horns of the crescent moon faintly chiseled on the sides. This representation is found also at Madā'in Salih.

Situated more to the south but still in the Nabataean sphere of influence are two temples built on a much simpler plan. The one known today as Qasr Qurayyim Sa'īd lies south of the port of Wejh. It has a square plan 26 ft. on a side, with the entrance, on the northeast side, flanked by two round pillars. In the center is a square colonnade, or tetrastyle, of four round pillars on each side, reminiscent of classical buildings (cf. R. F. Burton, *The Land of Midian Revisited*, I, London, 1879, p. 103, with plan; A. Kammerer, *Petra et la Nabatène*, I, Paris, 1929, p. 202, fig. 11; H. St.J. Philby, *The Land of Midian*, *The Middle East Journal*, IX, 1955, p. 127). The badly damaged temple of Ruwāfa (built A.D. 166-69) has a rectangular ground plan and a cistern in front of the entrance on the right-hand shorter side (cf. A. Musil, *The Northern Hejaz*, pp. 184-5, 291, and figs. 70-72 with plan on p. 188).

The necropolis of ancient Midian (el-Bed) in Mugayyir Shu'ayb, west-southwest of Hawrā, is of special interest. A. Musil (op. cit., p. 113, fig. 43) has reproduced the entrance to one of these tombs hewn in the limestone rocks; the remarkable doorway, carved out of the rock in imitation of the façade of a house, leads into a great chamber with tomb niches in the walls and floor (FIG. 542). The capitals of the two pillars are in a style midway between that of the Etruscan capitals of Cerveteri (cf. E. and R. Wurz, *Die Entstehung der Säulenbasen des Altertums unter Berücksichtigung verwandter Kapitelle*, *Z. für Geschichte der Arch.*, suppl. 15, 1925, p. 83, fig. 214) and the so-called "palmette" style from Cyprus (cf. G. Rawlinson, *History of Phoenicia*, London, 1889, fig. p. 171),

which in turn is closely related to the Phoenician palmette found in a piece of inlaid ivory from Nimrud (cf. H. Frankfort, *The Art and Architecture of the Ancient Orient*, Harmondsworth, 1954, pl. 170a) and is of an earlier type, appearing on the columns of the canopy in Nabupaliddin's building inscription of 870 B.C. (Frankfort, op. cit., pl. 121). The capitals of the Phoenician stele (G. Rawlinson, op. cit., pl. 142) are closer in style to the normal forms of the Ionic capital, as at Delphi (Frankfort, op. cit., p. 225, fig. 115) and in the Temple of Athena at Priene (F. von Luschan, *Entstehung und Herkunft der jonischen Säule*, *Der Alte Orient*, XIII, 4, 1912, p. 7, fig. 1); and these forms are echoed in the Nabataean temple of Gerasa

second group are characterized by a grooved architrave of Egyptian type on the ends of which are astragals supporting jagged crenelations resembling two flights of steps facing one another. In the so-called "proto-Hejrā" tomb, a combination of both types has been attempted (e.g., in B10, A.D. 34); thus further subdivisions are possible, according to the various decorations over the entrance — Greek pediments, friezes with triglyphs and metopes (e.g., A5, A.D. 31), even dwarf pilasters inserted below the grooving (F4, A.D. 63–64). In these tombs a very distinctive architectural element, the capital, makes its first appearance. Here we are obviously dealing with an original Nabataean creation, which was to replace the earlier



Pre-Islamic Arabia: Cultural areas and the spread of outside influences. (A) Arabia in about 400 B.C.: (1) Aramaic cultures (Nabataeans, Lihyanites), (2) South Arabian cultures (Minaeans, Sabaeans, Himyarites). (B) Arabia in about A.D. 300: (1) Greco-Roman culture; (2) South Arabian culture under Greco-Roman influence; (3) area under Iranian influence. (C) Arabia in the 6th century: (1) Byzantine culture (Gassanids in the Damascus region); (2) Area under Iranian influence (Lakhmids in the Hira region); (3) area of mixed Byzantine and Iranian influence (kingdom of Kind); (4) area of Ethiopian influence (Himyarites).

(Jerash) from the middle of the 2d century (cf. *RBib*, XLIX, 1940, pl. IV, 1). Capitals similar to those noted at Midian are also to be found in the Temple of Athena Polias (340 B.C.) at Priene and in the Temple of Apollo at Didyma, near Miletos (Alexandrian period). Since all these buildings were built about three centuries earlier than the tomb façades of Midian, the capitals of the latter represent a kind of conservatism that may be explained by the local lingering of earlier forms (cf. J. Durm, *Die Baukunst der Griechen*, *Handbuch der Arch.*, II, 1, Darmstadt, 1881, pp. 189, 191). The interesting pattern on the architrave is reminiscent of the Ionic volute pattern of the architrave of Kharibet Medeybi' in Transjordan (*RBib*, XLV, 1936, pl. VIII, 5) but is rather to be related to Phoenician tradition (cf. Durm, op. cit., p. 159).

Although knowledge of this type of tomb is essential to an understanding of the development of architecture in northwest Arabia, it is of secondary importance compared to the great necropolis of Hejrā, whose monuments date from A.D. 1 to 75. The interior of these sepulchres usually consists of a chamber with tomb niches in the walls and floor, such as we know from Petra and Midian. What is interesting here architecturally is the outer wall, usually an imitation of the façade of a Hellenistic dwelling, the lintel over its entrance sometimes having figure decoration. Jaussen and Savignac (*Mission archéologique en Arabie*, I, p. 307 ff.) have divided these tombs roughly into two groups, those with crenelated coping along the top and those surmounted by a step motif; and O. Puchstein has made a further chronological subdivision. The earliest type of these mausoleums is probably the pylon tomb with crenelated coping, such as we have already noted in a simpler form in the Midian necropolis and shall find again in that at Hejrā (e.g., E9 according to the Jaussen-Savignac numbering), where it is rounded off on top with an extra row of crenelations. Later the lintel itself was enriched with figured decorations of various kinds, such as two confronted animals separated by a rosette, or an arch above the door with vases as acroteria. Mausoleums of the

simple plinth with its wavy fluting or its sides tapering toward the base (cf. Jaussen and Savignac, op. cit., I, p. 306, fig. 115, p. 387, fig. 194). The stone swells in a curious convex curve on both sides above the echinus, probably to suggest an acanthus leaf fanned by the wind; this recurs on other capitals (Jaussen and Savignac, op. cit., I, p. 37, figs. 151, 152, p. 339, fig. 154, p. 351, fig. 165, II, p. 96, fig. 39). The sepulchres in which this type of capital occurs were built between A.D. 35 and 75. The rough acanthus-leaf capital seems to have taken the place of the fluted tapering capital, as in tomb B6, A.D. 1 (Jaussen and Savignac, op. cit., II, p. 86, fig. 30) (FIG. 545). Both forms of capital have a curiously baroque quality and show that the Nabataean stonemasons were fully capable of producing original forms.

Sculpture. No sculptures in the round of the Nabataean period seem to have come down to us. On the other hand, several statues from the Lihyanite era, all from Kheraybe (el-'Ulā), have been wholly or partially preserved. A torso obviously influenced by Egyptian sculpture was studied by J. Euting and has since been reproduced by D. H. Müller (*Epigraphische Denkmäler aus Arabien*, pl. XII, 2ab); Jaussen and Savignac have reproduced (op. cit., II, pls. XXVIII–XXXI) two larger-than-life-size statues, probably representing Lihyanite kings, now in the Istanbul Museum, and also the lower part of a similar statue (loc. cit., pl. XXXII, 1); and W. Caakel has reproduced (*Lihyan und Lihyanische*, fig. 3, facing p. 56) one of the many male heads from Dedan. The two huge statues reproduced by Jaussen and Savignac seem to date back to the 1st century and show undeniable Egyptian influence. They have been ascribed to a Nabataean artist, trained by an Egyptian sculptor, who did portraits in Egyptian style for the Ptolemies. An example of coarse, completely provincial work is provided by two seated lions guarding tomb monument A1 (Jaussen and Savignac, op. cit., III, pl. XXXV); they probably date back to late Lihyanite times and are undoubtedly copied from

the two lions on the Minaean tomb A2 (Jausen and Savignac, op. cit., III, pl. XXXIV, II, pp. 71, 72). Equally coarsely worked is the relief to the right of the entrance to the simple rock-cut temple of Jebel Ethlib. This relief, badly weathered, is carved out of the living rock and represents a human figure with raised arms (Jausen and Savignac, op. cit., I, p. 411, fig. 201, p. 413, fig. 203), probably intended as the figure of a god; there is a parallel representation at Rām.

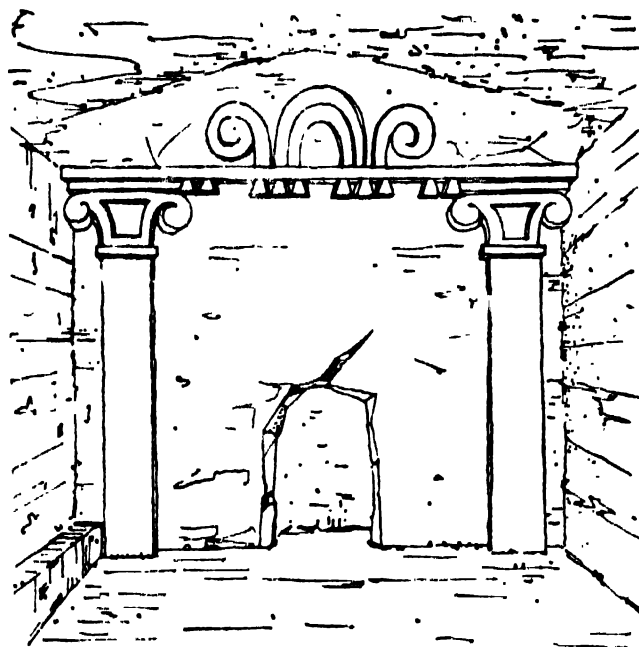
So far no monuments of a genuine Nabataean character have been discovered in the Hejaz, for both the Ruwāfa temple and the temple of Qaṣr Qurayyim Sa'īd are Greco-Roman, as is, for example, the Nabataean temple at Jerash in Transjordan (ca. A.D. 150). But in the Hejaz there are some interesting tombs worked in the rock which really belong to the realm of sculpture. The Nabataean inscriptions on these tombs reveal the names of many of the families of stonemasons who worked on the necropolises; all are Nabataean names. The dominating influence of the great neighboring cultures along the Nile and the Euphrates might at first appear to account for these tomb façades; but further examination reveals that this is not true. Here, too, there is the grooving so characteristic of Egyptian art, but it is shallower and more Greek in profile. The Nabataean masons also used the idea of the Egyptian pylon but did not attempt to copy it exactly. The step motif, which is common to both main groups of the Hejrā tombs, was not derived directly from Mesopotamia, where it originated, but from the later forms developed in Syria and Phoenicia. The Greek influence, however, seems to have been more direct in the triangular pediment and the figured decoration of the triglyphs and metopes in the frieze over the architrave. The area as a whole shows a style born of a fusion of classical and Oriental forms (cf. R. Dussaud, *Syria*, I, 1920, p. 167; W. Caskel, op. cit., pp. 56-8; Jausen and Savignac, op. cit., I, pp. 392 ff., 405 ff.; II, pp. 78 ff., 83-96; A. Kammerer, op. cit., pp. 222-30, 460-93, 507-10; O. Puchstein, *Die nabatäischen Grabfassaden*, Jdl, XXV, 1910, Anzeiger, pp. 3-46).

SOUTHWESTERN ARABIA. In contrast to northwestern Arabia, where monuments of artistic interest appear, so to speak, only sporadically, southern Arabia is full of ruins and provides an almost continuous chronological series of varied works of art. Strabo (XVI, 778, 19) and Diodorus (*Bibliotheca Historica*, III, 47, 6-7) praise the domestic implements of beautifully wrought gold and silver. None of these has been preserved; nor are there any remains of columns overlaid with gold and silver, capitals adorned with silver reliefs, or doors and roofs covered with gold ornamentation and inlaid with ivory, as in the more splendid private houses. But the bronzes and other sculptures that have come down to us demonstrate the achievements of the artists of southern Arabia. These, with the architectural achievements of these people, cannot but excite our admiration. Besides, what we now have is very little in comparison to what has been irreparably lost through natural disasters, wars, and, not the least damaging, senseless vandalism. Much may yet remain to be discovered by archaeologists when conditions become more favorable. Clearly, under present circumstances an account of the archaeology of ancient southern Arabia can be only provisional and sketchy.

Architecture. a. Technique. In the rock masses of the southern Arabian plateau there is excellent building material (granite, gneiss, basalt, sandstone, limestone, marble, and alabaster) without which large monolithic blocks and columns would not have been possible. Occasionally, material must have been brought from afar; Qarnāwu, for example, was built from stone quarried 31 miles west of the city, and the marble for the temple of Shabwa was brought from the high plateau about 30 miles east-southeast of the town in spite of far greater transport difficulties. In addition, the forests that provided timber for the necessary wooden buildings and for strengthening the walls of stone structures with planks, crossbeams, and pilework were, according to Agatharchides (*De Mari Erythraeo*, 97) and Strabo (XVI, 776), well to the east (W. H. Ingrams saw such woods at Wādī Maasila in Hadhramaut; cf. *GJ*, LXXXVIII, 1936,

p. 348). We have already encountered this method of building in the temple at Rām; it was used also in the Ka'ba at Mecca. Various building inscriptions (cf. *Rép. d'Ep. Sémitique*, 2774, 2783, 2942, 3869 and inscription 43 found by the Austrian expedition of 1899) refer to the combined use of wood and stone. Sun-dried brick was used then, as it is today, as well as stone (*Rép. d'Ep. Sémitique*, 2687).

Many of the walls consist of an outer and an inner facing with the space between filled with rubble and mortar; the



Nabataean tomb at Midian, façade system (redrawn from Musil).

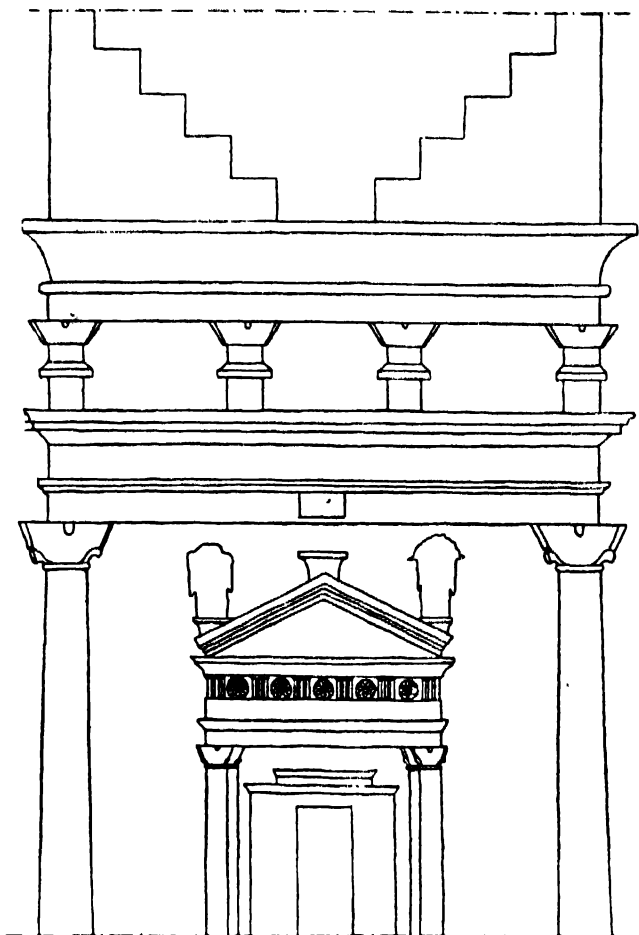
two facings thus separated are held together by crossbeams (e.g., at el-Huqqa, Haram Bilqis, and Naqab el-Hajar). The disadvantage of this method of construction is that the facings are not securely joined, with the result that in many cases one of them has caved in (cf. C. Rathjens and H. von Wissmann, *Vorislamische Altertümer*, p. 71). The stones were held together customarily by very strong and durable mortar resembling cement, sometimes by plaster, and occasionally by asphalt (cf. *Rép. d'Ep. Sémitique*, 3050).

Coarse constructions built of piled-up stones joined and covered with mortar have also been found (e.g., in Gaybūn; *GJ*, LXXXVIII, 1936, bottom pl. facing p. 533), but the city walls and the temples were as a rule built of well-cut blocks, often of remarkable size and fitting perfectly into one another without cement. For greater cohesion, lead rods were run through aligned holes in the blocks, as in the walls of the dam at Marib. These blocks often have decorations (*anathyrosis*) at the edges such as were already in use in the 8th century B.C. in the Awwām temple at Marib, in the temple of the west gate of Ma'in (M. Tawfiq, pl. VII, fig. 9), in the city walls of Ma'in (Tawfiq, op. cit., pls. 17-21, figs. 30-38), and in the ruins of Im'adiyya (*Ant.*, XIII, 1939, p. 134). C. Rathjens reproduces (*Sabaeica*, I, p. 62, fig. 43) a block of this type from Husn Gaymān with a protruding lower edge. In Palestine such blocks are to be found in the city wall of Samaria (9th cent. B.C.), in the outer wall of the temple at Jerusalem, and in Phoenician buildings; this method of building may therefore have come to southern Arabia from Palestine.

The walls of many buildings were made to slope slightly by one of two methods: by laying each course a little farther back than its predecessor (as at el-Huqqa, Husn Gaymān, and Yeha in Ethiopia), a technique known to the Assyrians and still being used in buildings of the early Islamic period (8th century) in eastern Syria, as, for example, in the dam at Harbaqa

near Qasr al-Hayr el-Garbi; or by beveling the stones with a chisel, as in the Egyptian mastabas at Sillā, Naqab el Hajar, and elsewhere.

The builders were not content with simply coating the walls with plaster; they faced them with stone slabs so that



Tomb at Hejrā, façade system (redrawn from Kammerer).

they appeared to be built of square blocks decorated at the edges, as in the temple of el-Huqqa and at Marib; such blocks were in fact often used in this way (e.g., in Gaymān; Rathjens, op. cit., I, p. 81, figs. 82-5). Painted stucco was also used on walls, for example, in the temple of el-Huqqa, where ornamentation is curious and was probably intended as a stylized representation of the palmette that appears not only in potsherds from Mycenae and in late Mycenaean vases but also in the sacred tree of the Phoenicians. Sometimes the floor, too, is overlaid with painted stucco, as in the temple of Shabwa.

Even the earliest buildings are decorated with figurative or purely ornamental designs. In the Temple of Almaqah at Sirwāh, the walls were finished off at the top with a frieze of ibex heads surmounting the letter □ (b) (cf. A. Fakhry, *An Archaeological Journey to Yemen*, III, pl. III); and H. Y. Nāmi has found similar friezes in Marib and in the museum at San'a. Ibex heads of a more stylized nature appear on a building stone in Husn Gaymān (Rathjens, op. cit., I, p. 71, fig. 66), and there is also a long fragment of a frieze from Gaymān with a pattern of a vine and clusters of grapes framed by a meander (Rathjens, op. cit., p. 70, fig. 64). Usually this type of frieze is more simply decorated; thus in the temple frieze at el-Huqqa there is an indented design of steps; another freestone from the same place has a niche of four steps with a sprig pattern (Rathjens and Von Wissmann, op. cit., p. 51, figs. 17, 19); and a fragment of a frieze from Shibām (Kawkabān) has the favorite dentil motif (Rathjens, op. cit., I, p. 103, fig. 111). The design on this fragment is obviously connected with the method used for

wood paneling, which is also known to us from Etruscan and early Greek wooden buildings. It was especially suited for friezes, because, as A. Wotschitzki has shown (Dorica, *Amann-Festgabe*, Innsbruck, 1953, pp. 172-7 and fig. 1b), the triglyph of the Doric frieze was in Greek architecture originally intended to hide the ends of the rafters.

Often several motifs are combined in one pattern, as in an architectural detail in Gaymān consisting of a series of horizontal grooves cut to resemble a wall of squared stones and, to the right and left, pairs of false doors and false niches separated by more grooves above. Nāmi found a similar example in the museum at San'a (cf. also Rathjens, op. cit., I, p. 68, fig. 62, p. 69, fig. 63). A curious stone from Husn Gaymān has a vertical dotted pilaster and a limestone frieze covered with a design of waving tendrils in stucco (Rathjens, op. cit., p. 71, fig. 85, and p. 34, fig. 29). Other architectural components, such as steps and window frames, often show the excellent craftsmanship of experienced masons.

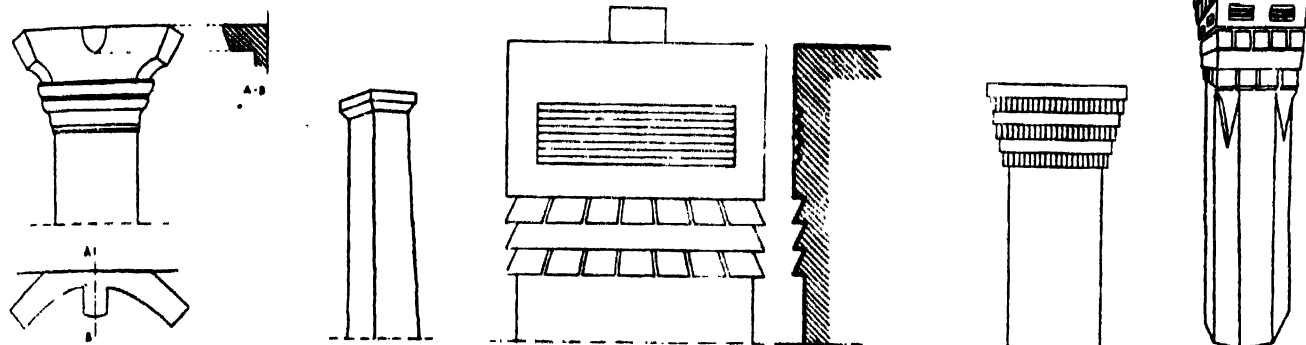
The technique of covering parts of the walls with sheets of bronze, exemplified in the lesser temple of Haram Bilqis in Marib, was taken from Egyptian temples (e.g., in the Rameseum at Thebes, in the Temple of Ramses III at Medinet Habu, and in the Temple of Ammon at Karnak).

The shape of the piers and columns in ancient southern Arabian buildings is especially characteristic. The earlier ones are invariably monoliths 10 ft., 6 in. to 29 ft., 6 in. in height, square or rectangular in cross section, and unornamented, as at Ma'in, Sirwāh (el-Khariba), Marib (Haram, 8th cent. B.C.; cf. Fakhry, op. cit., III, pls. IX, XIV, XXXIV, LVII, LIX), and Kaskaṣ in Ethiopia. They are reminiscent of the piers of the funerary temple of Khafre in Giza and the tomb of Ti in Saqqara. In Ma'in some effort was made to relieve the rigidity of the blank surface by decorating the edges and boring small holes in a pattern down the middle of each side (cf. Tawfiq, op. cit., pl. VII). The column that E. Glaser saw on the Meydan near Marib (FIG. 545) is a development of this monolithic pillar with a four-cornered plinth placed on top and beveled toward the shaft of the column. An unusual form of this is to be found in the temples of al-Belid and Rūbāt (Dhofar), with the corners rectangular or concave and capitals like inverted step pyramids, recalling similar columns in Adulis, Aksum, and Koloe. From this, after the corners were made to slope, came the octagonal columns in the temples of Sirwāh (Arhab), el-Huqqa, el-'Erreyn, Beyt Gufr, Shibām (Kawkabān), and others. This type of column was common for about four centuries following the 2d century B.C. (cf. Fakhry, op. cit., I, p. 51, fig. 19B, III, pls. XIX, XXB), but it is very old and in Egypt, for example, is found in the Temple of Mentuhotep as early as 2100-2000 B.C. (*The Biblical Archaeologist*, XV, 1952, pl. X). From a further sloping-off of the corners came the fluted, 16-sided column, which gives the effect of a round column. Examples of this are to be seen in the temples of Sirwāh (Arhab), Medinet Tulqum, Yeha in Ethiopia, and elsewhere. Again, parallels can be drawn with Egyptian piers (Beni Hasan, Middle Kingdom, 12th Dynasty).

The capital was adapted to the changes in the shaft of the column. In the monolithic quadrangular columns of Sirwāh (el-Khariba, 8th cent. B.C.) it consists of an elongated cube with a square peg on top which fitted into the architrave above (FIG. 545). Each side of the cube is divided into five sections. The first section has three grooves running across it, the second and fourth have sharply projecting denticulation, and the third and fifth are blank (cf. Fakhry, op. cit., I, p. 51, fig. 19A, III, pl. XXA). The projecting denticulation is reminiscent of the slate slabs jutting out from dwelling houses in Asir and may, like them, have served originally as protection against the heavy rainfall. They indicate the existence of an earlier wooden construction. Equally early is the capital consisting of several layers, originally plinths placed one above another and decreasing in size toward the base like steps, intended merely to adjust the distance between the shaft and the architrave (FIG. 545). Such capitals have already been encountered in the palace of Minos in Crete (A. Evans, *The Palace of Minos at Knossos*, Oxford, 1930, III, p. 514).

fig. 359, cf. p. 513, n. 4), where the middle plinth of the three is denticulated. This step motif, technically justified in the capital, may come either from Egypt (pyramid of Saqqara) or from Babylon (ziggurat, obelisk of Shalmaneser III) and is in any case widely diffused, being found on the stele of Yarhai in Palmyra (J. Starcky, *Palmyre*, Paris, 1952, pl. XIV, 1), on Phoenician steles (*CIS*, I, 1, pp. 179, 290), in the temple of Paphos in Cyprus (from a coin in G. Rawlinson, *History of Phoenicia*, London, 1889, p. 145, fig. 2), on columns in houses of Hellenistic date at Delos, on Sassanian capitals (G. Rawlinson, *The Five Great Monarchies of the Ancient Eastern World*, 3d ed., London, 1873, III, p. 320, fig. 100), in Persian fire altars

native in character, and later southern Arabian art, with its obvious Hellenistic influence. We should note here the excellent workmanship to be found, for example, in the marble column from Shibām (Kawkabān) now in the museum of San'a. The capital, with its three rows of overhanging acanthus leaves waving in the wind, is separated by a grooved echinus from the fluted shaft, and the fluting is curved in the shape of a bow at the top and bottom of the shaft. Below the grooved torus is the base, consisting of a three-layered plinth of the step-pyramid type decorated with rosettes in the middle and a spiral pattern above and below. The importance of the acanthus leaf in this column approaches that of the same motif in the



Types of capitals. Left to right: Nabataean capital from a tomb near Hejrā (from Kammerer); pier and capital near Marib (Glaser reconstruction); cubic capital surmounted by plinth from Sirwāh (redrawn from Fakhry); elevation and section; capital with step plinth from Sirwāh (from Glaser); octagonal column with capital surmounted by plinth from el-Huqqa (from Rathjens and Von Wissmann, *Vorislamische Altertümer*, 1932).

(M. Dieulafoy, *L'Art antique de la Perse*, Paris, 1884, I, p. 49, fig. 55; V, pl. II), and even in Delhi (H. Gluck and E. Diez, *Die Kunst des Islam, Propyläen Kunstgeschichte*, 2d ed., Berlin, 1931, III, p. 335), to give only a few examples. The multi-layered capital is still used in central Arabia today, as can be seen, for example, in the columns of the mosque of Jubayl between el-Arid and Jebel Tuwayq (cf. H. St.J. Philby, *Arabia of the Wahabis*, London, 1928, p. 74, fig. 1). The motif was also favored in the ancient art of southern Arabia; we find it in pedestals of three steps supporting altar steles (G. Ryckmans, *Inscriptions Sud-Arabses*, V, *Le Muséon*, III, 1939, nos. 242, 270b, pl. III, and p. 97). The number of superimposed plinths varies from three to six. They are either left blank or have horizontal grooving or denticulation alternating with blank spaces as in the temples of el-Huqqa (FIG. 545), Husn Gaymān, Beyt Gufr, and Marib; the transition to the octagonal shaft is effected by triangular wedge-shaped elements.

The change to the so-called "box capital" was made by way of a kind of cube or parallelogram with indented ornamentation and horizontal grooving as at el-Gerās and Hāz. We may assume the existence of similar motifs for the bases; in a base from Marib (cf. Fakhry, op. cit., I, p. 94, fig. 40, III, pl. 37) there is a sort of shallow groove providing a transition from the shaft of the column to the plinth, then a blank section with denticulation at the bottom, and below this a series of glyphs, rounded off by imitation plinths sloping gently outward down to ground level; the whole of this base is carved from one single block.

The 16-sided columns giving the effect of being round, such as A. Fakhry saw in Sirwāh and in the village of Marib, which occur in Amran, Gaymān, San'a, and el-Gerās (cf. Rathjens and Von Wissmann, op. cit., p. 133, figs. 89, 90, p. 185, photo 128; Rathjens, op. cit., I, p. 32, fig. 26, p. 67, fig. 59), show a succession of blank surfaces and projecting denticulation on both base and capital. Two curiosities should also be mentioned: a column with horizontal fluting on the cube capital from Husn Gaymān, and a quadrangular shaft with vertical slits like windows from Shibām (Kawkabān) (Rathjens, op. cit., I, p. 67, fig. 60, p. 101, fig. 109).

There is a strong contrast between the design of such columns as these of the earliest period, which is thoroughly

Corinthian capital and is strongly reminiscent of capitals of the middle and late Roman empire (2d-3d cent.). The conception of the three rows of acanthus leaves recalls the Assyrian volute tree, a stylized version of the palm tree (cf. F. von Luschan, *Entstehung und Herkunft der jonischen Säule, Der Alte Orient*, XIII, 4, 1912, p. 23, fig. 21) which penetrated through Assyrian influence into southern Anatolia and can be seen, changed into the form of the acanthus, in Greek lekythoi of the 5th cent. B.C. (cf. E. and R. Wurz, op. cit., p. 119, fig. 285a and b, p. 120, figs. 286, 289). However, their immediate source seems to have been capitals like those in the south thalamus in the Temple of Bel at Palmyra. The rosette motif, too, seems to have come from this region (cf. D. Schlumberger, *Les formes anciennes du chapiteau corinthien en Syrie, en Palestine et en Arabie, Syria*, XIV, 1933, pls. XXVIII, 1, and XXXII, 2). Nāmi also found a similar capital in the museum at San'a, but here the two rosettes are replaced by a single rosette with spirals springing from it at the sides, and there are only rudimentary veins on the leaves (FIG. 547). The shaft and base reproduced by Rathjens (op. cit., I, p. 102, fig. 110) must have belonged to a column of similar type. Here the transition to the torus is made by a plinth with oval depressions carved diagonally in the stone and possibly intended as a rope pattern, whereas on the socle is a large eight-petaled rosette, which reappears on a doorpost in el-Gerās. The capital of the octagonal pier which E. Glaser found built into the mosque of Menkat (see D. Nielsen, *Handbuch der altarabischen Altertumskunde*, I, Copenhagen, 1927, p. 158, fig. 37) also belongs to this group of Greco-Oriental capitals. In its acanthus leaves and the spiral volutes between them, it recalls the Jerash capitals (cf. Schlumberger, op. cit., pl. XXXVII, 3), but its prototype was more probably a capital of the kind found in the tholos in Epidaurus (360-330 B.C.; cf. E. and R. Wurz, op. cit., p. 124, fig. 293). The denticulation on the plinth is a free interpretation of the Palmyra capitals on which it is modeled (cf. Schlumberger, op. cit., pl. XXIX, 1, 138 A.D., and XXXI, 1, 67 A.D.). As the capital in all probability was brought from the ruined Christian church at Zafār, which had been built by Bishop Theophilus in 354, it can be dated with a fair degree of accuracy. Finally, we should not forget to mention a capital from the Husn el-'Urr in Hadhramaut, which, although reminiscent in its form of

the capitals on the Tripylon at Palmyra, shows Sassanian influence in its vignettes enclosing hunting scenes (now in the museum at Aden; cf. H. von Wissmann and M. Höfner, *Beiträge zur historischen Geographie des vorislamischen Arabien*, p. 138, fig. 17; A. Jamme, *Pièces anépigraphiques sud-arabes d'Aden, Le Muséon*, LXIV, 1951, pp. 167-69 and pl. VII).

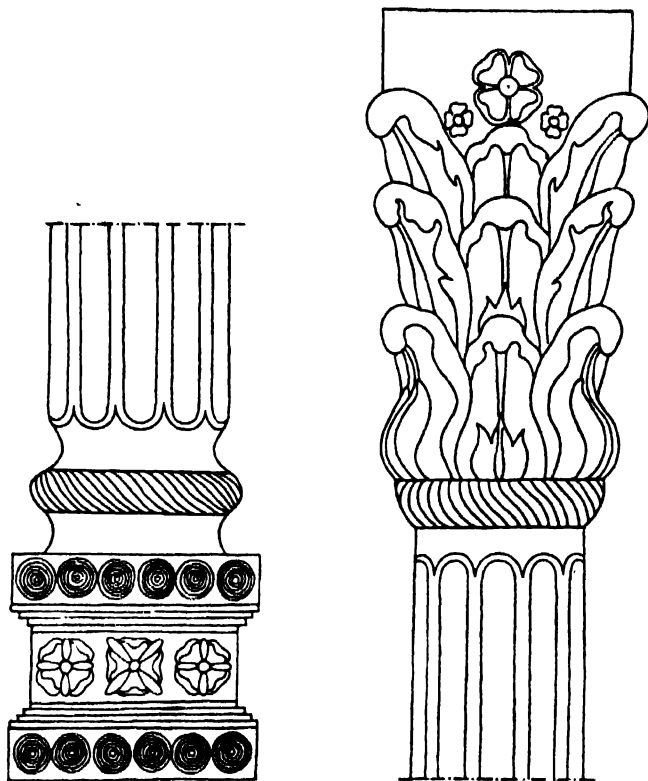
Constructions in which both wood and stone were used were referred to earlier. Admittedly in southern Arabia itself no direct architectural evidence for this appears to have been

connected with the ancient southern Arabian method of building multistoried edifices, already referred to, which must then have passed to East Africa, where it was still being used in the Middle Ages for church building; even the church erected by the Ethiopian viceroy Abraha in San'a was built in this fashion. That this technique was also known in southern Arabia is shown by the decorated stone girder heads on several houses in Shibām (Kawkabān) (cf. Rathjens, *op. cit.*, I, p. 104, fig. 113). Unfortunately these "monkey heads" cannot be dated with certainty; they are clearly pre-Islamic, however.

The giant stele at Aksum also has striking affinities with a small incense altar now in the Kunsthistorisches Museum, Vienna, which, as is clear from a comparison with Ethiopian palaces (e.g., Enda Mik'el in Aksum; cf. Krenker, *op. cit.*, II, p. 109, fig. 247), is modeled on a palace with projecting wings; the same architectonic form is also to be seen in the Fortress of Saul at Tell el-Fūl, three miles north of Jerusalem (ca. 1620-1000 B.C.; cf. W. F. Albright, *The Archaeology of Palestine*, Harmondsworth, 1949, pp. 120, 121, fig. 30). This small altar, too, suggests that both wood and stone were used in contemporary buildings; the ends of the crossbeams here protrude above and below the windows, as in the limestone model of a five-story tower of pylon type which came from Sakhā and is now in the Egyptian Museum in Cairo (cat. no. 56352; about 30 in high, 9 1/8 in. long, and 5 1/8 in. thick). The combination of wood and stone and the construction of multistoried buildings therefore appear to have been common to both southern Arabia and Egypt. An important passage in Strabo (XVI, 768) confirms Eratosthenes' statement that Sabaean houses resembled Egyptian ones in the dovetailing of the crossbeams.

Two representations of palaces, or possibly dwelling houses, should also be considered in this connection. A. Fakhry discovered one of them on two blocks of stone in the ruined part of Marib (cf. Fakhry, *op. cit.*, I, p. 12, fig. 81, III, pl. XLIIIA), and the other occurs in a relief in the Ottoman Museum in Istanbul. The former shows a façade consisting of a central section with a high, doubly recessed doorway, and to the right and left of this doorway deep twofold niches, each with four window openings. This central section is topped by a plain cornice above which is an ornamentation in the shape of a double hourglass laid horizontally. On either side of this central section is a two-story tower, the division between the stories being indicated by a horizontal groove; the triangular roof is adorned with horns and surmounted by an ornament like a crown. The Istanbul relief (PL. 330) shows a double version of this kind of palace façade. The partitioning of the walls for effect by means of projecting masonry recalls the use of the same technique in the "White Temple" of Uruk (Warka) in Mesopotamia (ca. 3100 B.C.; cf. V. G. Childs, *New Light on the Most Ancient East*, London, 1952, p. 126, fig. 63) and also in the façade of the palace of Wuswās (cf. *Mitteilungen der Deutschen Orient-Gesellschaft*, no. 51, 1913, pl. facing p. 60). The technique must somehow have sprung from this source and was perhaps assimilated with the other cultural acquisitions made in southern Babylonia by the Arabs of the south and brought to Yemen from their earlier settlements, perhaps those on the Persian Gulf. The only palace in southern Arabia of which anything remains, a palace in the ruins of el-Ukhūdūd, has this kind of projecting masonry on the north and south walls, as in the relief at Istanbul. Obviously the origin of the technique lies in ancient buildings of brick for which, as in predynastic Egypt, stone had been substituted.

b. Religious architecture. The temples of southern Arabia are of great importance. According to ground plan, they may be divided into four classes: (1) rectangular: Ma'in (Qarnāwū), Sirwāh (Arhab), el-Huqqa, Riyām, Marib (el-Amaid), Sirwāh (el-Khariba, the two small temples), Ma'ber, Huan Suwaydāt, Shabwa, and Hureidha in Hadhramaut, al-Belid and Rūbāt in Dhofār, and Yeha in Eritrea; (2) square: Gaybūn; (3) rectangular with one of the short sides ending in an apse: Sirwāh (el-Khariba); (4) elliptical: Marib (Haram Bilqis), el-Masājid, and Qerōsa in Hadhramaut.



Marble column base and capital probably from Shibām (Kawkabān), in the San'a Museum. Diameter of column shaft about 10 in. (redrawn from Rathjens, *Kulturelle Einflüsse in Südwestarabien*, 1950).

discovered, but the colossal steles of pre-Christian Aksum must have been built by southern Arabian colonists, and there are other signs that this technique was also used in southern Arabia itself, perhaps less in temple architecture than in that of palaces, fortresses, and private houses. The wall is constructed in separate sections, on each side of which are laid joists piercing the walls and dovetailed into the beams so that they grip them in the manner of anchors. Thus the ends of the joists, called "monkey heads," protrude from the wall and produce a decorative effect. This technique was known to the ancient Cretans (cf. Evans, *op. cit.*, III, p. 325, fig. 216, p. 342, fig. 227; H. T. Bossert, *Altkreta*, Berlin, 1937, p. 150, figs. XIX, XXIV) and is also shown in a representation of a building on a gold plate from Volos (Iolkos in Thessaly; cf. Bossert, *op. cit.*, fig. 188, pl. XCV). It was practiced in Lycia (cf. Durm, *op. cit.*, p. 15, fig. 8), where it persists today, in Asia Minor (e.g., at Zinçirli), in northern Syria (Palace of Niqmepa at Alalakh, end of the 16th cent. B.C.), and in Tell Halaf (15th-14th cent. B.C.; cf. Frankfort, *op. cit.*, pp. 145, 169, and fig. 81; R. Naumann, *Architektur Kleinasiens*, Tübingen, 1955, p. 91, fig. 75, p. 99, fig. 85). If in this connection we consider the giant stele of Aksum, which is about 108 ft. high and represents a building of 13 stories, we shall find an obvious similarity to the technique just described. The double rows of disks represent the "monkey heads." D. Krenker (*Deutsche Aksum-Expedition*, Berlin, II, 1913, p. 30) assigns them to the 1st to the 4th centuries. But the technique must be older, as it is

The earliest relatively well preserved example of a rectangular temple is the so-called "Rasfm" temple of the Minaean period, also called el-Mikrāb (PL. 325; FIG. 551), dedicated to the god Athar and situated a little less than half a mile northeast of the eastern gate of the ancient city of Qarnāwu (Ma'in). Like the temples of Harim and Gaybūn it seems to have been erected on an artificial mound in the plain. The rectangular outer wall has two openings (Tawfiq's plan shows only the western one). The main entrance, on the west side, leads to the sanctuary first by way of a prostyle formed by four granite columns 10 ft., 8 in. high and about 1 ft., 7 in. thick supporting an architrave 14 ft., 9 in. high, and then through an opening 10 ft., 6 in. high between two pairs of square piers of pink granite (one standing 4 ft., 11 in. behind the other); these pillars are about 7 ft., 4 in. high and 1 ft., 4 in. thick and are surmounted by an architrave. The prostyle and the sanctuary entrance 6½ ft. beyond it to the east support long parallel granite girders that form a roof sloping down from the tetrastyle to the east. It was evidently designed to withstand severe storms. Some of its features are unique in southern Arabia. The prostyle architrave adds 2 in. to the height of the piers, which are 2 ft., 3½ in. apart. The pairs of columns in the entrance to the sanctuary are about 40 in. apart. The colonnade in the sanctuary itself consists of six quadrangular piers ranged along the side walls, three on either side; four are of limestone, one of sandstone, and one of pink granite. There is no trace of a roof, so the sanctuary may well have been open to the sky unless it was roofed in with rafters. From it a second door leads into the open. The ornamentation incised in low relief on the soffit of the sanctuary entrance and on one of the piers is of interest. On the soffit, for example, we see a row of five ibexes in repose beneath eight rows of vipers intertwined with one another; the ibexes are followed by a zigzag frieze, then a row of wine jugs, and below these three dancing girls whose feet rest on another zigzag frieze. Below this another row of five ibexes in repose completes the pattern. A similar design appears in the temple of Medinet el-Harim. At the top of the granite pier in the sanctuary are seven rings, below them five standing ibexes separated by a zigzag pattern from a second row of ibexes facing the spectator, which is in turn followed by another zigzag pattern. Beneath this is a row of spearheads, then another of standing ibexes, and finally at the bottom nine pairs of vipers intertwined with one another. The design is excellent and shows the artist's complete mastery of the decorative element (the whole is reproduced by Tawfiq, op. cit., p. 21 and pl. XV, fig. 25). The Minaeans greatly favored rows of animals as a motif for wall decoration. They are reminiscent of the series of ostriches and ibexes in the Minaean colony of el-'Ula (Jausen and Savignac, op. cit., III, pl. XIX, 1, 2). The building as a whole aims at a massive, monumental effect and, according to the inscription on the architrave (E. Glaser, 1153; *Rép. d'Ep. Sémitique*, 2980), dates back to the reign of the second Minaean king known to us, Khalkarib Siddiq (6th cent. B.C.).

A. Fakhry (op. cit., p. 151) has already drawn a comparison between these Minaean temples considered as a group and certain temples in Egypt, for example, the temple below the second pyramid of Giza and the Temple of Osiris of Abydos; and there is no doubt that a similarity does exist, especially in the use of massive monoliths. The division of space, however, is completely different; in the prostyle we are reminded of the neolithic temple in the 11th stratum in Jericho (cf. M. V. Seton Williams, *Palestinian Temples*, Iraq, XI, 1949, p. 77, fig. 1), but the three pairs of pillars in the sanctuary (cf. the Ka'ba and the temple of Rūbāt in Dhofār) recall both the pillars in the subterranean crypt in the palace at Knossos (A. Evans, op. cit., I, 1921, p. 403, fig. 290) and those in the temple at Balatah in northern Palestine, dating back to the 14th-13th century B.C. (cf. A. Lods, *Israel*, London, 1948, p. 90 ff. and fig. 30; W. F. Albright, op. cit., p. 90, fig. 15, and p. 104). The siting of the temple on an artificial terrace is, as with the temple of Medinet el-Harim, derived from Babylonian temple architecture; thus the "White Temple" of Uruk (Warka), built about 3100 B.C., stands on a terrace 48 ft., 8 in. high

(cf. V. G. Childe, op. cit., p. 126, fig. 63). In spite of this the temple of Ma'in suggests an original and completely indigenous creation, an impression supported by the fine ornamentation on soffits and pillars (cf. Tawfiq, pp. 15-23, fig. 27, p. 21, pls. II, III, XIV, figs. 22, 23, pl. XV, fig. 25; Fakhry, op. cit., I, pp. 149-51, fig. 105 on p. 149; III, pl. LIX).

A second temple stood in the northern part of the Minaean capital. The outer wall, built of limestone blocks, is in the shape of an elongated rectangle oriented from west to east. The main entrance is in the west wall and leads into an open court bounded on the east by a bracket-shaped wall. Behind this, to the east again, is a second open court from which a narrow door in the northwest corner leads into the sanctuary, which is 23 × 16 ft. with an outer wall about 3 ft. thick. To the right of the sanctuary entrance stand six piers, which support the stone slabs of the roof. Here too, there is a certain similarity to the neolithic temple at Jericho, but the prostyle is lacking (cf. Tawfiq, op. cit., p. 12, pl. VIII, fig. 11, pl. IX, figs. 12, 13; Fakhry, op. cit., I, p. 148 and fig. 104).

About a mile west of el-Hazm and 330 yd. northwest of the village of Al 'Alī lies the Minaean temple of the old city of Harim; unfortunately it is now completely ruined except for one pier still standing at the entrance. The monumental gateway, a little more than 13 ft. high, lay to the west and led into a small antechamber, at the end of which a second gate led into a large court. The granite pilasters in the gateway are richly chiseled, probably by the same artist who worked on the soffits and the pink granite pier in the Athar temple at Qarnāwu. The left column is divided into two vertical panels, parallel to one another, and one horizontal panel. In the two vertical panels is a design of amphorae hanging from cords, and below these are round wine jugs and two dancing girls in rough-haired skirts and loose tunics recalling the costume of Sumerian priest-kings and the princes of Mari as well as that of the great singer Ur-Nanshe (cf. A. Parrot, *Les fouilles de Mari*, Huitième campagne, Automne, 1952, *Syria*, XXX, 1953, pls. XXI-XXIII, XXV; middle of 3d millennium B.C.). Two crouching ibexes complete the design. The long panel on the right-hand column contains four intertwined vipers and beneath them two ibexes in repose and is rounded off with two hands of zigzag (cf. Fakhry, op. cit., I, pp. 143-44, figs. 99, 100, III, pls. LXII, LXIII).

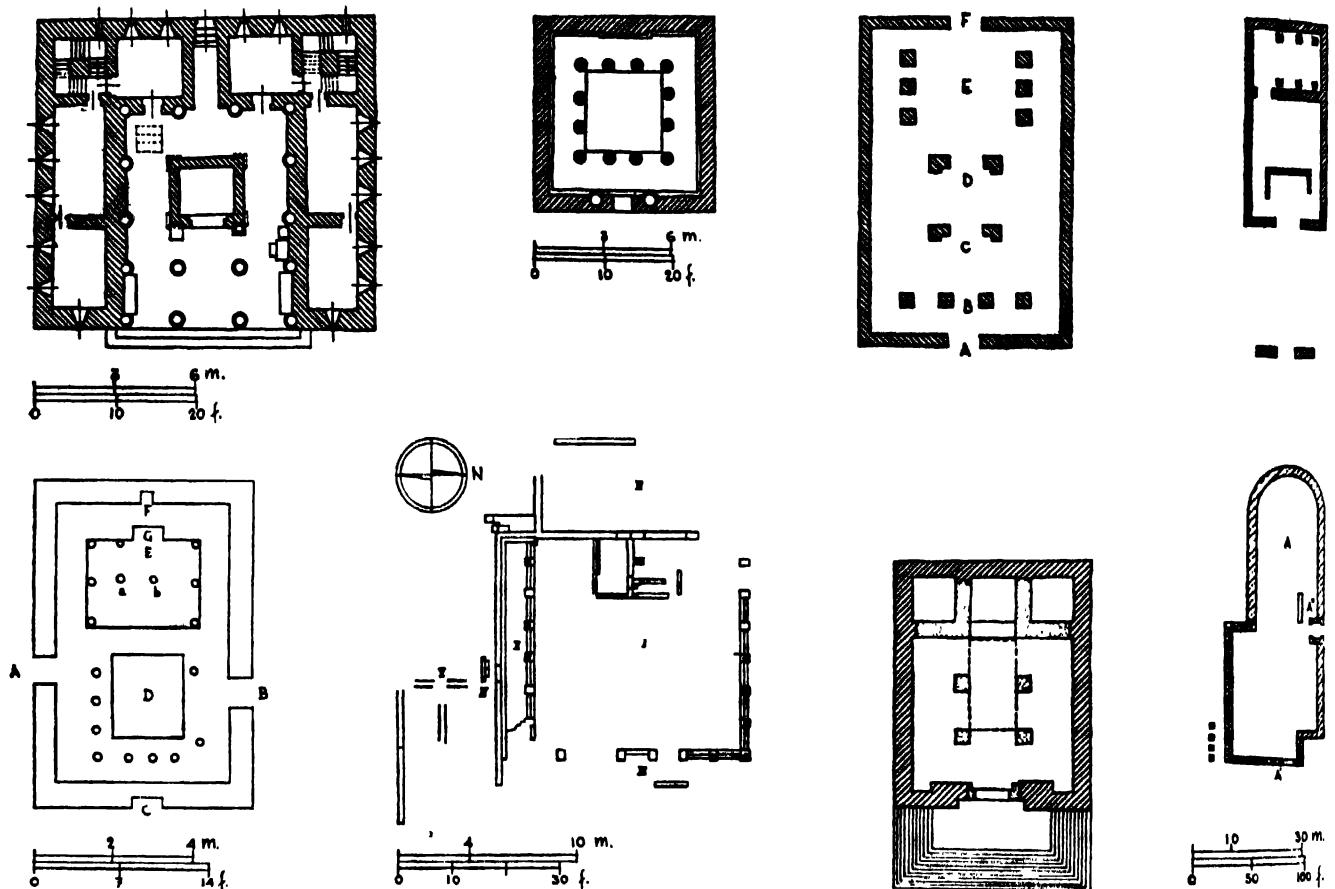
The next temple in this group, at Sirwāh (Arhab, in Sabaeen territory) is a rectangular building about 27 paces long facing southeast (FIG. 551). There are two entrances on the long sides (cf. Rathjens and Von Wissmann, op. cit., p. 67). The southeast wall, 19 paces long, contains a niche 3 ft., 5 in. wide which corresponds to another niche on the inner side of the northwest wall. The rear half of the interior is taken up by the cella (consisting of a colonnade), whose outer wall juts forward to form a wide recess in the stone opposite the niche in the northwest wall; this recess was probably intended as a statue niche. The front half of the interior contains a basin surrounded by columns. Only two of these columns, both 16-sided and 10 ft., 6 in. high, are still standing, and the others, all octagonal, are lying on the ground nearby. Probably all formed part of a colonnaded hall with an open court in the middle, similar to the Roman atrium. The niche in the northwest wall has been compared to the Islamic mihrab, and E. Diez (*Die Kunst der islamischen Völker*, Berlin, 1915, p. 8), as well as Rathjens and Von Wissmann (op. cit., p. 72), has seen the temple of Sirwāh as the prototype of the mosque. It is doubtful whether this view can still be maintained today, after the discoveries in Dura-Europos; the plan is typically Sabaeen, and one is tempted rather to compare these niches to the apsidal recess on the outside of the sanctuary wall of the temple of Gezer (Tell el-Sāfi in Palestine; the recess here faces the outer court with the fountain in its center; cf. Lods, op. cit., p. 90, fig. 29). It is also possible to draw a parallel with the niche in the outside wall on the south side of the Temple of Ramesses III in Bēth Shān (Bethshean, Beisan, in Palestine; cf. Seton Williams, op. cit., p. 87, fig. 9, p. 88).

The temple of el-Huqqa (3d-2d cent. B.C.; FIG. 551), dedicated to the sun goddess Dhat Ba'dan, has been studied

more scientifically than those previously discussed and even partly excavated; it lies 330 yd. south of the village on a small volcanic mound and is enclosed by a thick outer wall oriented east and west. The building consists of a paved court 40×40 ft. with a colonnade and rooms, now destroyed, built on to the north and south sides and connected by a passage. The sanctuary was undoubtedly the rectangular chamber which adjoins the court on the west side. It measures about $40 \times 16\frac{1}{2}$ ft. and is a little more than 2 ft. above the level of the colonnaded court. A rectangular structure about 17×11 ft., presumably a flight of steps with a platform at the top, led up to the sanctuary from the court. At the front of the temple and on both sides

at Gerasa (Jerash) (built A.D. 150; cf. *RBib*, XLIX, 1940, pl. IV, 1), where a three-sided peristyle encloses the steps leading up to the sanctuary; here, too, there is a cistern inside the foundation wall and to the right of the entrance (cf. Rathjens and Von Wissmann, op. cit., pp. 27-66, 168, figs. 5-10, 29-31, photos 13-20, pp. 30-42, 61-65).

Too little has been preserved of the other temples in this group to enable us to estimate their archaeological value in the same way. For example, only an entrance gateway of four columns with bases projecting slightly forward remains of the temple of Gaybūn (cf. Von Wissmann and Höfner, op. cit., p. 130 and fig. 14); the great temple of Shabwa (5th cent. A.C.),



Temple plans in northwestern and southern Arabia. Left to right and top to bottom: Rām (from *RBib*, 1915). Qaṣr Qurayyim Sa'īd (from Burton). Temple of Athar near Ma'in (from Fakhry); temple in the city of Ma'in (from Fakhry); Sirwāh (Arhab) (from a sketch by Glaser); el-Huqqa (from Rathjens and Von Wissmann, *Vorislamische Altertümer*, 1912). Yeha (from Krencker); Great Temple of Sirwāh (from Fakhry).

there was once a covered peristyle about 5 ft. wide and approached from the temple court by two steps; on the top step were six columns, each about 12 ft. high, of the type described above. In the middle of the right half of the temple court is the mouth of a cistern about 46 ft. long, 10 ft. wide, and 12 ft. deep, whose interior is curved like a barrel; it runs underground due north beneath the right-hand part of the peristyle and the outbuildings adjoining it to the north. Its second mouth, therefore, lay outside the foundation wall of the enclosure. All the architectural fragments that have been found, such as columns, window cornices, friezes, waterspouts, and reliefs, show a good if not artistically very high standard of workmanship. The two editors of the excavation results have established a similarity between the temple of el-Huqqa and the colonnaded mosques of early Islamic architecture, of which the temple in question may be regarded as a forerunner (Rathjens and Von Wissmann, op. cit., pp. 72, 74), but they have expressed no opinion about its relationship to other temple types. It bears a certain likeness to the temple of Sirwāh (Arhab) but a much greater one to the Nabataean temple

probably once had a broad ramp leading up to it from the main street of the city, on either side of which, just in front of the tetrastyle portal, stood a socle (cf. R. A. B. Hamilton, *GJ*, C, 3, 1942, p. 113; H. St. J. Philby, *GJ*, XCII, 1938, pp. 110-111 and facing pl.).

More is known about the temple of Yehā (FIG. 551), which lies northeast of Aduwa on a small hill. It was probably built in the 5th century B.C.; it measures about 61×49 ft. In the center of the entrance façade there is a recess in the wall about $23\frac{1}{2}$ ft. deep and $16\frac{1}{2}$ ft. wide. The substructure was clearly escarped at intervals and had an outside staircase; above it lay the ground floor (cella), with its polished walls and raised adytum, and the upper floor. The upper part of the wall on top of the smooth sides of the cella is laid about 8 ft. farther back; under the roof can still be seen the remains of wall decoration in the form of denticulated beam-ends that once protruded from the wall, as at Haram Bilqis in Marib. The entrance front has two windows and the north wall a waterspout in the 27th course, which indicates that there was once a floor of some kind halfway up the building. The temple

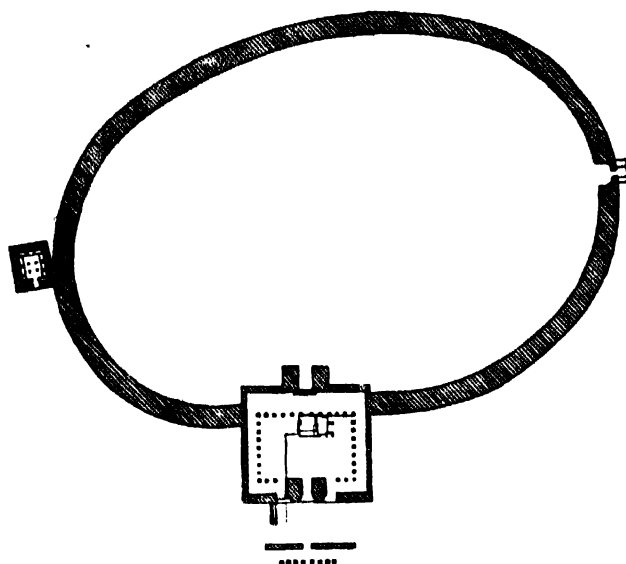
must have been covered with a flat roof; the ceiling of the cella was supported by quadrangular columns, and the adytum was divided into three chambers to receive the θεοὶ σύνναοι (cf. T. Bent, *The Sacred City of the Ethiopians*, London, 1893, pp. 136-42; D. Krenker, *Deutsche Aksum-Expedition*, Berlin, 1913, II, pp. 78-84, figs. 165, 166; Rathjens and Von Wissmann, op. cit., pp. 68-70).

The only square temple yet discovered in southern Arabia is the temple of Gaybūn, built on an artificial mound south of Meshed (Hadhramaut). Its sides are each 24 paces long, and it is oriented exactly according to the cardinal points of the compass.

The temple known as el-Khariba, in the ancient capital of Sirwāh, was photographed by A. Fakhry. It was dedicated to the moon god Almaqah and is in the shape of an elongated rectangle with the main entrance probably in the west, where five monolithic pillars, presumably once part of a propylon, were found. There may have been a second entrance on the south side. To the east the wall is rounded off in the shape of an apse (FIG. 551). The whole building (the front section is, however, in a very bad state of preservation) shows the same technique as was used at Haram Bilqis in Marib; that is, there are two parallel facings of limestone blocks, well hewn, with the space between them filled with rubble. Cross-walls keep the facings a certain distance apart. The outer wall, about 34½ ft. high, was decorated above the entrance with a frieze of ibex heads and around the doorcase with a double row of denticulation. The temple was built by Yada'il Dhārih, the second Mukkarib of Saba', in the early 8th century B.C. (cf. Fakhry, op. cit., I, pp. 29-32; III, pls. II, IV, VI, VIII; Von Wissmann, op. cit., pp. 77-8).

About 2½ miles to the southeast of the present-day village of Marib the oval temple dedicated to the god Almaqah, now known as Haram (or Mahram) Bilqis and in inscriptions called Awwām (FIG. 554). Its longitudinal axis (west-north-west to east-southeast) measures about 367 ft. and its latitudinal axis 246 ft. The elliptical wall is 13½ ft. thick and about 29 ft. high and is composed of an outer and an inner facing of well-hewn limestone blocks from 4 ft., 1 in. to 4 ft., 11 in. in length; the space between these facings, which are held together by transverse courses, is filled with rubble. The wall is divided vertically into three sections of decreasing thickness, each section being set 2 in. farther back than the preceding one. It was completed at the top by a double cornice of squared stones projecting from the wall as cubes and with a small space between, as in the great temple at Sirwāh. The oval outer wall is pierced by two entrances, the smaller, to the northwest, facing the city temple of Marib and, in A. Fakhry's opinion, connected with it by a processional way and a bridge over the Wadi Dhenne. The main entrance, to the northeast, originally consisted of a propylon, perhaps similar to that at Ma'in, of which eight monolithic pillars about 14 ft. high are still standing (PL. 325); but it was later converted into an atrium with a peristyle, now situated in front of these monoliths and containing a large threefold gate with two pylons leading into the peristyle, from which in turn a great door led into the elliptical temple proper. The peristyle is about 78½ ft. long and about 63 ft. wide and is built into the open ends of the oval wall. It is set with 32 almost square columns varying from about 16 to about 17½ ft. in height; at the top of each column is a rectangular peg 3¼ in. high which fitted the column into the architrave above. These columns presumably carried a roof which was also supported by the enclosure wall of the peristyle. The inner side of this wall is adorned with 64 recessed false windows with square apertures in them to imitate gratings and denticulated cornices; the recesses themselves are also surmounted by dentils, and there are similar "windows" on the outer side of the wall. A ledge about 105 ft. high, on which votive offerings were once laid, runs along the east and west walls, and in the northeast corner there are three small rooms and a flight of steps, probably added later, which seems to have led up to the roof of the peristyle; a second flight of steps to the left either gave access to the mezzanine or ran up to the top of the door-pylon. On the eastern side

of the oval temple stands a small quadrangular mausoleum measuring 20 ft., 6 in. × 14 ft., 2 in. inside and containing four quadrangular piers with capitals. Along the walls of the interior are several rows of tomb niches, and funeral chambers were sunk in the floor as well. The temple is surrounded by a necropolis of family vaults in the form of small sepulchers without windows or doors and with streets running between them (cf. E. Glaser, *Reise nach Mārib*, *Sammlung E. Glaser*, I, Vienna, 1913, pp. 41, 73 ff; Fakhry, op. cit., I, pp. 89, 92, III, pl. XXXIV; W. F. Albright, *The Excavation of the Temple of the Moon at Mārib (Yemen)*, *BAMSOR*, no. 128, 1952, pp. 25-36, figs. 1-6; Rathjens and Von Wissmann, op. cit.,



Plan of the large elliptical temple dedicated to Almaqah (the so-called Awwām temple) near Marib (from Albright).

pp. 66-7, fig. 32; Von Wissmann and Höfner, op. cit., p. 28, fig. 3; Von Wissmann, op. cit., pp. 77-8; Wendell Phillips, *Qataban and Sheba*, pp. 203, 256, 264, figs. facing pp. 213, 254, 256-7, 272).

The oval shape of the temple has been connected (Rathjens and Von Wissmann, op. cit., p. 67; Von Wissmann, op. cit., p. 76; Von Wissmann and Höfner, op. cit., pp. 28-75) with the buildings of Zimbabwe, but this now seems improbable. It is rather to be linked with circular constructions in Ethiopia, for example, the Church of the Four Animals, or Enda Iyāsūs, in Aksum (cf. T. von Lüpke, *Deutsche Aksum-Expedition*, III, Berlin, 1913, figs. 175, 176, 178), and may perhaps be compared with round tholoi in Cyprus (e.g., Erimi, *Iraq*, VII, 1940, p. 77) or with the foundations of similar tombs found in Area A of the Bronze Age settlement (ca. 3000 B.C.) 3 miles north of Ankara (D. Şevket Aziz Kansu, *Les fouilles d'Etiyokuşu* [1937], Ankara, 1940, p. 30 and fig. 39). Reference might also be made to the oval dwellings of the middle Minoan period found in Crete (Evans, op. cit., I, p. 147, fig. 108; first half of the 2d millennium B.C.). There is certainly a striking parallel between the temple of Awwām and the temple of al-'Ubaid in Babylonia, with its oval outer wall; this wall was built by King Shulgi of the 3d Sumerian dynasty; the temple is about 262 × 213 ft. The oval enclosure wall of the temple of Khafaje, east of Baghdad, offers yet another parallel. In both cases the temple precincts are surrounded by one or two asymmetrical oval enclosure walls (cf. P. Delougaz, *A Short Investigation of the Temple at al-'Ubaid*, *Iraq*, V, 1938, pp. 1-11 and plan, p. 10). The Danish archaeological expedition discovered a similar and roughly contemporaneous temple structure at Barbar in Bahrain, where a ramp leads up from the elliptical enclosure wall to the temple proper. This enclosure wall dates from about 2500 B.C., as it is contemporaneous with Temple II (cf. *Kuml*, 1956, pp. 189-98, p. 189, fig. 1, p. 190, fig. 2). It may also

to a considerable extent have suggested the plan at Haram Bilqis, as close connections between southern Arabia and the Persian Gulf must already have existed. The possibility of there having been similar contacts with Asia Minor should not be excluded; this would seem, indeed, to be indicated by the old southern Arabian place names Kana (in the Sabaeen language, Qana') and Adramytha (Hadhramaut), which we find on the Ionian coast, names which perhaps date back to an early enclave of southern Arabian colonists, similar, for example, to the Assyrian enclave of the 2d millennium B.C. discovered in Kanesh near Kültepe (Cappadocia). Von Wissmann and Höfner (op. cit., p. 109) have already drawn attention to these connections.

The achievements of the southern Arabians in construction of roads, fortifications, and waterworks do not come within the scope of this article. They have astonished even modern engineers and confirm the prevalent high opinion of the technical ability of this predominantly agricultural people.

Sculpture. The works of the ancient south Arabians in the field of sculpture are not comparable to their architectural achievements. The *Periplus Maris Erythraei* (28, *Geographi Graeci Minores*, I, p. 279) informs us that statues (*ἀνδριάντες*) had been imported into Kana for the king, leaving one to suppose that, at least in the 1st century B.C., the court's demand for fine works of art was satisfied from abroad. In Palmyra also bronze statues were imported (cf. H. Seyrig, *Antiquités syriennes*, Syria, XX, 1939, p. 181). Until the mid-20th century there was reason to believe that works of Greek sculpture did not reach southern Arabia until the Roman imperial era; but the discovery of a bronze statue (ca. 515-510 B.C.) of a Spartan warrior in the ruins of Buraida at the mouth of the Wadi Jerdān proves that Greek sculpture had in fact found its way into southern Arabia very early (cf. J. Beazley, *BSA*, XL, 1939-40, p. 83 ff.; B. Segall, *The Arts and King Nabonidus*, *AJA*, LIX, 1955, pp. 315-18, pl. XCIII, figs. 1-3; R. A. B. Hamilton, *GJ*, CI, 1943, p. 116). It is uncertain whether artists were actually bought like slaves and then put to work, as C. Conti Rossini (*Dedalo*, XII, 1927, p. 738 ff.) maintains. The confronted lions in relief, each bestridden by a boy in the round (2 ft. high and probably once mounted on a wooden stand in front of an altar or on the terrace of a house in Timna', where they were produced between 75 and 50 B.C.) were made from Alexandrian molds which had been imported from Egypt (PL. 330). Their Hellenistic derivation and their origin in the archetype of the sculptor Harpocrates are unmistakable (cf. B. Segall, *Sculpture from Arabia Felix, the Hellenistic Period*, *AJA*, LIX, 1955, p. 210 and pl. LVI, figs. 1, 2; Phillips, op. cit., p. 98 and pl. facing p. 112). The little alabaster torso of Isis, found in the Timna' cemetery and modeled on the statues of this goddess in the Louvre (ca. 200 B.C.) and on the Tazza Farnese, is also of Hellenistic type but in fact represents south Arabian work of about 150-50 B.C. (Segall, op. cit., pp. 213, 214, pl. LX, fig. 14). Further strong Greek influence is to be found in the bronze statue of a seated woman (Timna', ca. 50 B.C.), whose Greek coiffure was probably copied from a Greek coin or model, but the treatment of the folds in the drapery, similar to that in the Isis statue, is more reminiscent of statues from Palmyra (Segall, op. cit., p. 214 and pl. LXI, figs. 16, 17; Phillips, op. cit., p. 160 and pl. facing p. 181). Hellenistic influence also predominates in the bronze nude of a Negro, about 8 ft. high, which can be attributed by its inscription (*Rép. d'Ep. Sémitique*, 4708) to the 2d century; it was discovered in the ruins near Silā on the Jebel Karim (now in the museum at San'a; cf. Rathjens, *Kulturelle Einflüsse*, p. 34 and pl. III; *Sabaeica*, II, pp. 103-4 and 246, photos 394-6; H. Schlobies, *Hellenistisch-römische Denkmäler in Südarabien, Forsch. und Fortschritte*, X, 1934, p. 243 and fig.). To the period between 100 B.C. and A.D. 100 belongs the seated figure of Eros apparently from Amran and now also in the museum at San'a; it is to be assigned to that phase of Hellenistic art which has been called "baroque" (cf. Rathjens, *Kulturelle Einflüsse*, pl. II, fig. 17, p. 39; *Sabaeica*, II, pp. 105 f., 244, photos 385, 386), recalling

the statue of a boy from Ephesus (cf. W. Klein, *Vom antiken Rokoko*, Vienna, 1921, p. 29, fig. 6), which can be dated between 150 B.C. and A.D. 75.

These bronze sculptures may, however, all have been imported. This is certainly the case of the winged and bearded Dionysos Sabazios in bronze from Timna' (PL. 330), 5 $\frac{1}{2}$ in. high and perhaps dating from before the 2d century B.C. (cf. Segall, op. cit., pp. 212-3, pl. LVIII, figs. 7, 9; Phillips, op. cit., p. 323, and pl. facing p. 189). Even the horse with the rider missing, which comes from Gaymān and is now in the Dumbarton Oaks Collection (about 40 in. long and a little less than 40 in. high, 5th-6th cent.; cf. Schlobies, op. cit., p. 243; A. Jamme, *Dumbarton Oaks Papers*, no. 8, 1954, pp. 317-30, figs. 37-42) may have been produced outside southern Arabia. Perhaps the bronze hand and foot in the museum at San'a belonged to a similar statue. With these bronzes from Gaymān should be classed two heads from almost life-size bronze statues, in the museum at San'a, from the beginning of the 2d century. The female head, according to H. Schlobies (op. cit., p. 242, fig. 1) and Rathjens (*Kulturelle Einflüsse*, pp. 32-4, pl. II, fig. 13; *Sabaeica*, II, pp. 106 and 245, photos 387-90) is of markedly Hellenistic character, but it may nevertheless represent an indigenous Arab type. The male head, reminiscent of the famous statue of Hadrian and of the head of Darius from Nimrud Dag in Commagene (*AJA*, LIX, 1955, pl. LXXI, fig. 6 and p. 239; middle of the 1st cent. B.C.), may be a product of that Hellenistic art which flourished in Persia under the Arsacids (cf. Rathjens, *Sabaeica*, II, pp. 105 ff. and 245, photos 391-3; *Kulturelle Einflüsse*, pp. 32-4, pl. II, fig. 13). Another bronze statue in the museum at San'a has a completely Parthian appearance. It is probably to be assigned to the 2d or 3d century and is thus considerably earlier than the relief in the Kunsthistorisches Museum in Vienna (cat. no. 692; cf. A. Grohmann, *Handbuch der arabischen Altertumskunde*, Copenhagen, 1927, I, p. 168, fig. 60). Greek influence can also be detected in the head of a statue with a Sabaeen inscription on it which J. H. Mordtmann (*Zu den himjarischen Inschriften*, *ZMG*, XXXV, 1881, p. 437 and pl. II facing p. 438) has published. The features and the arrangement of the hair remind us of their Greek prototypes, but the excessively thick neck, the ill-proportioned eyes, and the narrow forehead betray the native artist's lack of real understanding of the style.

It should also be said, however, that there have been some undoubtedly indigenous sculptures in south Arabia (PLS. 327, 328), such as, for example, the finely worked alabaster head of a woman, belonging to a statue from the necropolis of Timna', where it was dug up by the American expedition (cf. Phillips, op. cit., p. 112 ff. and fig. facing p. 113). It probably dates back to the 1st century B.C. There is also excellent workmanship in the portrait masks, which were let into the funeral steles and which attest to the existence of a considerably developed art. The excavations at Marib have also brought to light a bronze statue of particular interest because of both its date and its typically Sabaeen style (PL. 330). It is 3 ft., $\frac{1}{4}$ in. high and was, like other statues of this nature, cast over a nucleus of compressed coal dust. It represents a man with an apron fastened around his waist and his left arm and leg extended; the right hand evidently once held a stick or a lance. A small dagger is stuck into his girdle and a leopard skin is slung across his back, the paws extending over his shoulders and around his hips. The powerful, fleshy nose and the thin, compressed lips are very striking. The inscription on the neck and shoulders informs us that the statue was a votive offering to the god Almaqah but tells us nothing of the subject except the name, Ma'ad Karib. W. F. Albright assigned it to the 8th or 7th century B.C., A. Jamme to the 7th or 6th. The former (*BAMSOR*, no. 128, 1952, p. 38 ff.) seeks its source in Ba'al-Melkart, who was worshiped in Tyre, Cyprus, and Amrit (northern Phoenicia) and was represented with a lion skin, like Herakles, with whom he is identified. B. Segall (*AJA*, LIX, 1955, p. 317) has also accepted this interpretation, although the statue obviously represents a man, not a god. The closest parallel with the leopard skin, which seems to be responsible for this statue's

having been connected with Melkart-Herakles, is perhaps the statue of the priest Pa-shere-em-Ptah, in the municipal museum in Alexandria, in which the paws also hang forward over the shoulders. It is questionable whether the dagger in the girdle would have been appropriate for a priest; on the other hand, we may here be dealing with a warrior, or *nimr*, for whom the leopard skin would have been, as suitable as was the lion skin for the Amharic warriors of Ethiopia. Be that as it may, the statue, in spite of a certain stiffness, shows remarkable artistic ability (cf. Phillips, op. cit., p. 261 and fig. facing p. 273; A. Jamme, *Sabaeen Inscriptions on Two Bronze Statues from Marib (Yemen)*, JAOS, LXXVII, 1957, pp. 32-6).

The numerous statues of ancestors found in southern Arabia are a special aspect of its sculpture (PL. 326). The most interesting ones were excavated from the dried-up bed of a torrent in the Sultanate of Lahej, which once formed part of the Kingdom of Awsān; they came onto the market in Aden and were acquired by Kaiky Muncherjee. All appear to represent members of the royal dynasty of Awsān, which became extinct on the collapse of the kingdom about 425 B.C. The oldest of them is a statue 2 ft., 11 in. high, in yellow-streaked white alabaster, representing King Ma'ad-il Salhān, the son of Yasduq-il (PL. 330). The king is wearing a tunic scooped out around the neck, with a fringed hem at the bottom, covered by a loincloth with fringed horizontal folds, and a girdle. The artist appears to have made no attempt to render the drapery realistically, probably because he felt himself incapable of doing so. The statue, intended to be seen from the front, is coarsely and clumsily executed; the forearms are stretched forward horizontally, making a right angle at the elbow an attitude common to almost all ancestor statuettes; the right hand is open and the left clenched. A crown adorns the head; the flowing hair ends in jagged tufts. For all its crudity, the statue does show a reaction against the wooden, blocklike forms of the other ancestor statuettes and an experimental stage of transition to representation in the round. The statue of Ma'ad-il's son, King Yasduq-il Fārī' Sharah'at (2 ft., 6 in. high) marks an important advance. Here too, there is a certain coarseness in the execution, but the drapery of the mantle thrown over the right shoulder is already clearly emphasized, as is the pleating in the tunic. It should be noted that the drapery seems here to be represented in true relief, not by shallow furrows, as in the torso reproduced by Rathjens (*Kulturelle Einflüsse*, pl. II, fig. 16; *Sabaeica*, II, p. 217, photo 230) and in the statue of a Moabite king, from the 9th-8th century B.C., reproduced by R. D. Barnett (*Four Sculptures from Amman*, *Ann. of the Department of Ant. of Jordan*, I, 1951, p. 34 ff. and pl. XI). The head, especially the lower part of the face, seems to point to a strong late classical influence, and even the beard differs considerably from the usual ancient south Arabian type. Bernhard Schweizer has assigned the statue to the first half of the 5th century B.C. because of its typically Greek drapery; for reasons of style it might date from well into the middle of the 4th century B.C., and W. F. Albright would even assign it to the last years of the pre-Christian era (cf. Von Wissmann and Höfner, op. cit., p. 8, n. 1); but historically it should be referred rather to the middle of the 5th century (cf. C. Conti Rossini, *Dalle rovine di Ausān*, *Dedalo*, VII, 1926-27, figs. on pp. 730, 731, 734, 735, 742; J. A. Jaussen, *Inscriptions Himyarites*, *RBib*, XXXV, 1926, p. 549, pl. X, figs. 1, 2; D. S. Margoliouth, *Two South Arabian Inscriptions Edited from Rubbings in the Possession of Maj.-Gen. Sir Neill Malcolm*, *Proc. of the Br. Acad.*, XI, 1925; Nielsen, op. cit., I, pp. 165, 166, fig. 56; Rathjens, *Kulturelle Einflüsse*, p. 28, pl. I, figs. 6, 7; A. Rihani, *Arabian Peak and Desert*, London, 1930, fig. facing p. 32; Von Wissmann and Höfner, op. cit., pp. 8, 69 ff., 142). The alabaster statue of a king, also from Awsān, presents an unusual type of sculpture (cf. Conti Rossini, op. cit., fig. p. 736). As usual the figure is represented with forearms extended, a pose found in statues from Phoenicia, Syria (Ras Shamra [Ugarit], 2d millennium B.C.), Palestine (ca. 1230 B.C.), and even Etruria; but the artist has here made no attempt to represent the feet. The statuette of a seated ancestor with forearms on his knees, in the Near Eastern Section of the Staatliche Museen

in Berlin (cf. Nielsen, op. cit., I, p. 165, fig. 55) is of simple, almost blocklike form, but the head is very expressively modeled with obvious echoes of Egyptian art (cf. the early dynastic statue of a girl from Abydos, *AnnSantEg*, XLVIII, 1948, p. 549, fig. 7).

We have so far been dealing mainly with the southwest region, because by far the greater part of the sculpture has been found there. Not enough is known about what was once the Minaean area, but we have already seen in the temple of Qarnāwu, for example, that art took a course of its own in this area, too. Of particular importance in several respects is the head of a clay statuette (now in the Ethnographical Museum, Hamburg), which came to light at Sūda in the Jawf. It is only 2½ in. high and badly damaged. Seen in profile, the nose and forehead are in an absolutely straight line, in sharp contrast to the type of head we find on Sabaeen steles and bronze statues; the eyes are deep-set and unnaturally close together; the upper lids are emphasized; and the pupils, represented by clay hemispheres, protrude sharply. The face is painted yellow, and the eyebrows and eyelids as well as the hair, which is covered by a kind of cap, are painted black (cf. Rathjens, *Kulturelle Einflüsse*, p. 16 and fig. 2; *Sabaeica*, II, p. 58 and figs. 144 and 202, photos 129, 130). Rathjens has recognized the close relationship between this head and products of the Aegean civilization, particularly the Mycenaean and Cretan; and, in fact, it does belong to the late Minoan, or Mycenaean, period (roughly 13th-11th cent. B.C.). But it is difficult to say whether this clay head is an imported or a local Minaean work. Still closer connections with the Aegean can be seen in a female figure in red clay from al-Sawdā in the Jawf (reproduced by C. Rathjens, *Die Weihrauchstrasse in Arabien*, *Tribus*, *Jhb. des Lindenmuseums*, Stuttgart, 1952-53, p. 287, fig. 1; *Sabaeica*, II, p. 41, figs. 134, 135). Strikingly similar to this is a statue from Ialysus in Rhodes (no. 257; see V. Müller, *Frühe Plastik in Griechenland und Vorderasien*, Augsburg, 1929, pl. XVIII), which is post-Mycenaean and is to be assigned to the 12th or 11th century B.C. Sir Leonard Woolley has also found parallels in pieces from al-'Ubaid, Arpachiyya, and Tell Halaf, according to W. F. Albright dating from before 2000 B.C.; they are therefore diffused over a wide area. It is possible that these statuettes, which were known as "island idols," came to south Arabia via the trade routes and inspired the native potters.

Returning to the Minaean settlements in the north, we note a close connection with Anatolia in the two seated lions guarding the entrance to the tomb in Khareybe (el-'Ullā). The lolling tongue and exaggerated fangs were obviously intended to inspire fear. The relief is about 3 ft. high, about a foot long, and about 4 in. deep. The closest parallel is the Lion Gate at Bogazköy (H. T. Bossert, *Altanatolien*, Berlin, 1942, pl. 472), from the period of the New Hittite empire (1475-1192 B.C.). This also has the characteristic gaping jaws and lolling tongue and the crudely executed paws and claws, but the Minaean bas-relief is considerably more stylized. A further parallel is provided by the lion of Sakjegeuzi (9th-8th cent. B.C.), reproduced by G. Contenau (*Mamel d'Archéologie Orientale*, III, Paris, 1931, fig. 760, p. 1153). The waterspout of el-'Ullā (Jaussen and Savignac, II, p. 74 and pl. XXXVI, 1) is also closely related in style to this lion relief, although there was obviously more scope for the Minaean artist in the waterspout, since it is in the round, than in the bas-relief. The style of sculpture is reminiscent of the lion on the base of a column from Zingirli (Zincirli) (Bossert, op. cit., fig. 201, p. 232; 9th cent. B.C.), and the waterspout itself recalls the front of a lion in bronze about 1 ft., 9 in. high and once used as a projecting wall ornament (now in the Fitzwilliam Mus., Cambridge; reproduced by A. Roes, *Un grand bronze hittite trouvé en Arabie*, *Syria*, XXX, 1953, pp. 65-71 and fig. 1, p. 66). This bronze comes from the Shibām district in Hadhramaut; A. Roes believes it is of Hittite workmanship from about 700 B.C. The modeling of the nose, the grinning mask, and the eyes are all reminiscent of the head of the lion of Alalakh from the 15th-14th century B.C., reproduced by H. T. Bossert (op. cit., p. 139, fig. 579). There is, however, no reason to suppose that the

Shibām bronze is of Hittite origin. But the similarity to the el-'Ulā waterspout, which has close affinities with Hittite art but is actually a piece of local Minaean workmanship, does justify such a supposition in the case of the bronze in the Fitzwilliam Museum; besides, Hadhramaut was in constant contact with Ma'in, and it is hence quite possible that the Fitzwilliam bronze is also of Minaean origin. We have only to compare it with the lion's head in bronze from Awsān in C. Conti Rossini (op. cit., p. 745) to see how the Near Eastern stylized animal types underwent local variations in southern Arabia. We have already referred to the relationship between ancient art in southern Arabia and that in Anatolia. The remarkable standard of bronze casting in Hadhramaut is also attested by the fine bronze lamp with the figure of an ibex for a handle (see below).

The bas-reliefs (except those obviously under Hellenistic influence; e.g., some remarkable works from Marib shown in PL. 327) carry the impress of a primitive, almost peasant art. The torso is usually viewed from the front, while the feet are seen in profile and, like the face and hands, are often very clumsily carved. Two of the many reliefs of human figures will suffice as examples. One (PL. 330), a tomb relief divided into two sections (CIH 419) and measuring about $1\frac{1}{8}$ ft. \times $10\frac{1}{8}$ in., was apparently found in Petra (cf. Clermont Gauneau, *Un sacrifice à Athtar*, *JA*, series 6, XV, 1870, p. 302 ff.); in the upper half is a Sabaean lady sitting in a high armchair playing a guitar, with a maidservant on either side of her and beside her head a little dog. Below, we see the same lady lying on her couch attended by a maidservant. The treatment of the subject is very interesting from the iconographic point of view. Identical parallels can be found in antique art for the figure of the dead woman on the couch in the lower half (e.g., A. Conze, *Die attischen Grabreliefs*, Berlin, 1893, II, 2, pl. CCLIII; 480–317 B.C.). The two pillars framing the figures in the upper half are identical with those on a stele from Hadrumetum (cf. E. and R. Wurz, op. cit., p. 38, fig. 94). These pillars are surmounted by what was probably meant to be a two-headed dragon, and the corners are filled with grapes and vine leaves, the symbol of eternal life. The second tomb relief, measuring about 1 ft. \times 8 in., of yellowish-brown limestone, probably comes from Hāz and was first published by C. Rathjens and H. von Wissmann (op. cit., p. 118, photo 68); it shows, in the space hollowed out below the inscription, two women sitting facing one another, with what seem to be distaffs in their right hands. But it is also possible to interpret the objects as vases, such as often appear with symbolic significance on both ancient southern Arabian and Greek tomb reliefs (the *lutrophoroi*). The relief is now in the Near Eastern Section of the Staatliche Museen in Berlin (cat. no. 8943).

In contrast to these mediocre representations of human beings, the reliefs depicting plants and animals often show an artist's mastery of his medium. A. Fakhry has published a fine example of an animal relief from Marib (*An Archaeological Journey to Yemen*, I, p. 124, fig. 71; III, pl. XXXVIIB). The excellently carved inscription is enclosed by a border of ibexes and finished off at top and bottom with denticulation and horizontal grooving. Fakhry has provided us with another example in the limestone incense altar, also from Marib (Fakhry, op. cit., p. 126, fig. 77; III, pl. XLVIIA). On the front of the socle of this altar is carved a fine relief representing a tree of life, toward which two great ibexes are leaping, while two ibex kids nibble at the leaves above them. There is a similar relief in the Musée Borély in Marseilles, containing ibexes, signs of the zodiac, and an inscription (PL. 330). The most beautiful of the reliefs (PL. 329) depicting plants must be the gateway pillar from Gerasa with its vine frieze, so striking in its fine composition and excellent execution (first published in Rathjens and Von Wissmann, op. cit., p. 134, fig. 91). The fine relief, no. 282 in the Ottoman Museum in Istanbul (see also M. Hartmann, *Südarabien*, VII, *Orientalische Literaturzeitung*, XI, 1908, col. 173 ff.) combines animal and plant motifs. At the top of the relief is a row of heads of bulls between two heads of dragons, and beneath this a luxuriant vine laden with grapes and growing out of the horns of a bull's head; there are also birds

pecking at the grapes, but they are rather rigidly carved, like toys. The same motif often recurs — for example, in an alabaster slab in the Louvre with vines and grapes (M. M. J. and H. Dérombourg, *Nouvelles études sur l'épigraphie du Yemen*, *Rev. d'Assyriologie*, I, 1886, p. 55, pl. I), and in a large fragment of a slab from Marib, measuring $12\frac{1}{2}$ \times $10\frac{1}{8}$ in. (cf. Fakhry, op. cit., I, p. 130 ff., figs. 87, 89; III, pl. XLIXA). We have already seen this motif in the temple of Ba'al-Samin in SI (40–10 B.C.; cf. M. de Vogüé, *La Syrie centrale*, Paris, 1865–67, pl. III) and at Palmyra (T. Wiegand, *Palmyra*, Berlin, 1932, pl. LIIC, and text vol., p. 95, fig. 108); it was even used in the Ommiad period, for example, in Qasr al-Hayr el-Garbi (*Syria*, XX, 1939, pl. XLIV 2 facing p. 328).

Three figured reliefs belong to a special category. As B. Segall has shown (*Sculpture from Arabia Felix*, *Ars Orientalis*, II, 1957, pp. 35–42), they belong to an earlier period (ca. 1300–750 B.C.) and reveal strong Syrian influence.

To sum up, we can say of ancient southern Arabian sculpture that its creators adhered to a conventionalized type of art which seems to be in direct contradiction to the Greek sense of form. This is especially noticeable in the ancestor statuettes, which often give the impression of rough peasant art, almost a kind of primitive cubism. Good workmanship is rarely to be found among the statues in the round; the Greek influence, which presumably came not only by way of Egypt and Syria (Palmyra) but also from Persia, as well as the forms inherited from ancient Anatolia and the Aegean, had only an indirect influence and were adapted to suit the traditional taste of the country. Besides, the technical ability of the native sculptors, although often remarkable, was considerably inferior to that of artists in the areas mentioned above. Yet we get the impression here, as in southern Arabian architecture, that foreign influence had reached south Arabia before the beginning of recorded history. Moreover, a specifically southern Arabian style was already in existence in the earliest era of recorded history. The Hellenistic influence was particularly widely diffused from 100 B.C. to A.D. 100, but there had been ample opportunity for south Arabian sculptors to imitate Greek work from the 6th century B.C. onward. Great skill was often shown in geometrical ornamentation, a feature that became characteristic also of Islamic art.

Minor arts. Few examples of goldsmith's work have been preserved. The Kaiky Muncherjee Collection in Aden has some of the most interesting, such as the golden bull's head, formerly set with jewels, and the golden plate chased with a lion and ibexes (cf. Conti Rossini, op. cit., p. 750 ff.). A particularly interesting piece is the chased golden plate in the Near Eastern Section of the Staatliche Museen in Berlin (cat. no. 8977; cf. Rathjens and Von Wissmann, p. 204, photo 161); it measures $1\frac{1}{10}$ \times $1\frac{1}{8}$ in. and seems to show Indian influence. The two small bronzes in the Kunsthistorisches Museum, Vienna, which were acquired by the south Arabian expedition of the Academy of Science in 1899 and perhaps came from Shabwa (cf. A. Grohmann, *Göttersymbole*, Vienna, 1914, p. 58, fig. 149, and p. 68, fig. 179) have been convincingly connected with the Luristan bronzes (before 600 B.C.) by S. Smith (*Two Luristan Bronzes from Southern Arabia*, *Archaeologica Orientalia in Memoriam Ernst Herzfeld*, ed. G. C. Miles, New York, 1952, pp. 203–7); but he has established no date for the two south Arabian pieces. Also in the Kunsthistorisches Museum, Vienna, is a fine bronze lamp from Shabwa, $13\frac{1}{8}$ in. high and, notwithstanding the inscription that was added later, dating from the Achaemenid era (5th–4th cent. B.C.), as Smith maintains (op. cit., p. 206 ff.); Nielsen (op. cit., p. 171) connects it with Sassanian silver, but it can also be linked up with the Achaemenid jug handle in the form of a winged ibex (cf. H. Frankfort, *The Art and Architecture of the Ancient Orient*, pl. CXCII).

There are a few pieces displaying good workmanship to be found among the large amount of jewelry that has been preserved, most of which either shows strong foreign influence or was actually imported from abroad (e.g., Egyptian scarabs and Sassanian gems); good examples are the agate cameo re-

produced by Rathjens (*Sabaeica*, II, p. 113, figs. 170, 180) and the Qatabān jewel in the British Museum with the following inscription: 'AB 'AMM ("My father is [the god] 'Amm")' (cf. M. A. Levy, *ZMG*, XII, 1858, p. 159 ff.).

For an account of South Arabian ceramics, which were not outstanding, the reader is referred to Rathjens, *Sabaeica*, II, p. 176 ff.; and Rathjens and Von Wissmann, *Vorislamische Altertümer*, pp. 75-82.

EASTERN ARABIA. Little of note has been found in this region, and works of sculpture are as yet rare. In 1940, P. B. Cornwall discovered a headless limestone statue 3 ft. high in a garden near al-Qatif; apparently from the island of Tarūt, it portrays a male figure in a rich costume of Persian-Semitic type possibly of the Parthian era (1st-3d cent.) and characteristic of Palmyra and Dura-Europos. The attitude is awkward and both feet are turned to the left (cf. P. B. Cornwall, *Ancient Arabia: Explorations in Hass 1940-41*, GY, CVII, 1946, pl. on p. 45; R. Leblich, *The Arabia of Ibn Saud*, New York, 1952, pl. facing p. 27). A similar statue, from Iraq, has been reproduced by H. Seyrig (*Antiquités syriennes*, Syria, XX, 1939, p. 182, fig. 4).

Among the terra cottas, only a pre-Hellenistic head of a camel from Jāwān, obviously a local work, is worthy of mention (cf. R. LeBaron Bowen, *The Early Arabian Necropolis of Ain Jawan*, New Haven, 1950, p. 40, fig. 21D).

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Illustrations. PLS. 325-330: 7 figs. in text.

ARCHAEOLOGY: RESEARCH AND DISCOVERIES. Archaeology occupies a preeminent position among the many fields of cultural activity which today are concerned with the fine arts. Not only does it uncover new evidence concerning familiar phenomena in the history of art, but through excavation it often brings to light monuments of the past of which every trace would otherwise have been lost. In this sense, archaeological activities represent a primary art-historical source. In fact, our knowledge of the artistic heritage of some cultures, particularly the classical and the non-European, is entirely dependent upon archaeological finds. But aside from providing the raw material for art history, the two fields are complementary and integrally united by their methods and concepts.

SUMMARY: Archaeology and art (col. 562). The classical world and the origins of European civilization (col. 564). The rediscovery of preclassical antiquity (col. 568): *The Near East and the Aegean area*; *Prehistory*. Non-European civilizations (col. 573): *Asia*; *America*; *Africa*; *Oceania*.

ARCHAEOLOGY AND ART. Archaeology comprises both the recovery and the study of antique monuments. In general, "antique," as the term will be used here, refers to civilizations appreciably remote from our own. In the Western world, the term is applied specifically to the civilizations of ancient Greece and Rome and to all that preceded them. In other geographical areas, the concept of antiquity assumes various connotations depending upon the degree of continuity with surviving traditions. Archaeology is thus related to artistic phenomena in both its practical and its critical aspects, which are in turn intimately related.

Neither in theory nor in an absolute sense can we establish a precise boundary between works of the past which have survived in an uninterrupted tradition and those which have been lost for a time and then rediscovered. Many objects of relatively recent date have been accidentally hidden or abandoned; others have been consciously concealed as treasures in order to preserve them. Individual buildings and monumental groups have been reduced to ruin soon after their construction; structures in inaccessible areas of the world have been partially buried or invaded by sand and vegetation. Buildings that have been demolished may be studied only through the remains of their foundations, through fragmentary architectural elements carried away from their original locations (as with many antique monuments), and through secondary documents. Frequently frescoes that have been plastered over and canvases that have been repainted require a very elaborate and careful process of reclamation and cleaning.

On the other hand, some antique buildings of rather remote date have been continuously known or in some instances even used uninterruptedly. In the same way, Roman fortifications and bridges and early Christian basilicas, not to mention urban centers themselves (see TOWN PLANNING), have remained in use throughout the centuries. Highly revered and precious objects, such as antique gems, have been cherished over the millenniums and preserved long after the fall of the civilizations that created them, this occurred with Aztec and Peruvian treasures, which were brought to Europe after the conquest of Central and South America.

At the same time, ancient remains are often found by other means than archaeological excavation. Antiquities have been discovered during the construction of modern buildings, they have been found casually on the surface of the ground or through the exploration of deserted, overgrown areas; they have even been retrieved from the sea.

There is no denying, however, that in practice there exists a fundamental distinction between a "living" and a "dead" tradition as regards the substance of their monumental heritage, the way in which we come to know it, and, in the last analysis, our ability to evaluate it. In the case of "living" civilizations, the evidence we possess has been preserved virtually intact. It is immediately accessible, enriched by accessory documents of every sort, and illuminated by uninterrupted spiritual, social, and technical traditions. With "dead" civilizations, on the other hand, it is a matter of finding, digging up, and reconstructing from fragments the remnants of a destroyed world. And in any case, the fragments remain fragments, incomplete and obscure indexes that often require long study to render them intelligible even to a limited extent. Only after complex interpretation do they become useful tools to the historian of civilization and of art. Thus we are able to approach the facts of the past by way of intermediary processes. Meanwhile, every step in evaluation must remain provisory in view of the very good possibility of subsequent amplification of knowledge through new discoveries.

The "antique" arts, in all aspects of their form and development, in the very existence of figurative traditions or of great artistic personalities, are revealed almost exclusively

through archaeological excavations and discoveries. The increase in our knowledge of the artistic horizons of the distant past closely corresponds to the progressive expansions and intensification of archaeological activity in the modern era. (In the Western world, these activities began in the Renaissance; in the Orient there has not been a systematic or conscious use of archaeological research for historical and art-historical purposes.) The field of archaeology has had, as we shall see, its own coherent development within the framework of the rise of general historical interest in modern times. Largely determined by the practical conditions of exploration, the field has gradually outgrown its limitation to the Western world to include civilizations more and more remote in time and space.

The rediscovery of classical antiquity with the rise of Humanism (q.v.) was closely linked to the study of Roman monuments and Latin literature. Thus archaeology arose primarily as a phenomenon of classicism (q.v.). Systematic explorations of the great Roman centers were undertaken early, and later, at the beginning of the 19th century, exploration of Greek sites also began. Investigations were then expanded to include provincial, Christian, and medieval Italic antiquities.

During the 19th century, the work of archaeologists increasingly revealed the almost completely unknown art of the ancient Near East. The grandiose undertaking of excavating the remains of this remote world reached a peak in the first half of the 20th century, and the archaeologists of that era are to be credited with having extended our perspective of the figural arts to the most distant prehistory. Thus, always moving outward from its Western and Humanistic roots, making use of technical experimentation, and achieving a more sophisticated grasp of historical problems, archaeology has enlarged its scope to include lands outside Europe, to reveal the antique phases of the civilizations of the Middle and Far East, and to study pre-Columbian America.

Taken as a whole, the value of archaeological discoveries for the reconstruction of the history of world art is immeasurable. Without it, the possibilities for verification and evaluation of art history would be entirely limited to the cycle of European medieval and modern art, coupled with a few imprecise perceptions of the art of the antique world other than that of the Orient and of primitive cultures of the present day. These last, moreover, were "discovered" at the same time as the rediscovery of ancient and prehistoric art, though in a quite different manner and not without influence from the progress of archaeology. Furthermore, the various critical positions assumed by the contemporary world toward the problems of art and art history would be unimaginable without the progressive revelation of the artistic phenomena of past civilizations (see ART; CRITICISM). Archaeology has provided direct contact with classical antiquity and especially with the original creations of the Greeks; it has brought about an understanding of the conventions and traditions of preclassical and primitive art; and above all, it has given us the possibility of appreciating the extraordinary variety of figurative concepts widely distributed in time and space and remote from the predilections of Western taste.

But the effects of archaeological discoveries on modern artistic culture are clearly manifest even outside the area of specialized studies. Fashion and limitation of criteria for judgment have contributed to exaggerated admiration for the "excavated object," which at times appears to be more in demand than the painting, merely because it is ancient and rare. A major effect has been the formation of collections of antiquities and the creation of great archaeological museums (see MUSEUMS AND COLLECTIONS). Both are fostered by a flourishing commerce in antiquities which differs substantially from the art market and which often instigates illicit excavations for purposes of speculation (see DEALING AND DEALERS).

Especially important was the influence of various archaeological discoveries of individual works of art or entire civilizations on modern taste and even on modern artistic production (see ANTIQUE REVIVAL). The classicistic vogue that began in the Renaissance (see CLASSICISM; HUMANISM; RENAISSANCE) was continually revitalized during subsequent centuries and cul-

minated in the neoclassic period in the early 19th century (see NEOCLASSIC STYLES). Inspiration also came from diverse exotic origins such as Egyptian and general Oriental antiquity, and Etruscan, prehistoric, and pre-Columbian sources, which, especially in recent years, have gained a great deal of interest not only for amateurs and artists but also for the general public.

In addition to being a practical activity, however, archaeology has become a historical discipline involved with the monuments and material remains (other than literary documents) of ancient cultures. It is responsible for the classification, reconstruction, and interpretation of remains for the purpose of gaining a better understanding of the spirit and evolution of those civilizations. It is thus a technically defined and self-sufficient discipline, although it is basically a subsidiary of history. Since the material remains of human endeavor are the media through which man expresses his figurative capacity (just as written documents transmit man's literary production), archaeology is concerned with ancient monuments from the point of view of their artistic interest. And it is at this point that archaeology interpenetrates the history of art.

Formerly the prevailing conception of archaeology was as the study of works of ancient art exclusively or even as the history of ancient art (hence the name *Kunstarchäologie*, or archaeology of art). But as the horizons of archaeology have been progressively widened to include topography, anthropological remains, and technical manifestations especially of preclassical and prehistoric peoples for many of which all other cultural indications are lacking, the orientation and methods of archaeology have continually developed toward a comprehensive study having as its final aim the understanding of ancient civilizations in general.

Thus the discipline of archaeology has emerged at the mid-20th century as the indispensable preparatory study leading to knowledge of ancient art all over the world and to the reconstruction, within the limits of possibility, of a history of ancient art. Within its scope falls the organization of a relative chronology of preserved monuments, the understanding of their purpose and meaning, and the attempt ideally to reintegrate them with their environment — a work of delicate reconstruction from which the study of more recent art is a thing apart. In spite of the breadth of its scope, however, archaeology obviously does not exhaust the special tasks of the historian and the critic of art.

THE CLASSICAL WORLD AND THE ORIGINS OF EUROPEAN CIVILIZATION. Interest in Roman monuments, whether out of curiosity or as support for religious traditions, was already awakened during the late Middle Ages in the *Mirabilia Urbis* and was stimulated by chance individual discoveries. But only with the Renaissance was the era of actual research and exhumation of the ancient world begun.

At the beginning of the 15th century, Humanists and artists described in words and drawings the remains of buildings and sculptures; they collected objects not only in Rome and the regions to the west but also in Greece (as did the Italian merchant Cyriacus of Ancona). Whole complexes of buildings were discovered, as well as famous works of art, such as the paintings of the Domus Aurea, the Golden House of Nero (the so-called "grotto" from which is derived the term "grotesque"), the *Laocoön* (1506), the sculptures of the Baths of Caracalla (1546-47), and the bronze chimera of Arezzo (1553), which were destined to influence profoundly the taste of the age. Comprehensive excavations were begun in Rome and other locations in Italy. A still more intense phase of exploration of ancient Italian centers occurred in the 18th century, when, with the discovery of Herculaneum and Pompeii, the various kinds of architecture, sculpture, painting, and minor arts of antiquity were documented.

Revelation of the Greek world did not come until somewhat later. The sculptures of the Athenian Parthenon were noted during the Renaissance, but the "discovery" was fully achieved only at the end of the 18th century and the beginning of the 19th. Lord Elgin, British Ambassador to Turkey at the

time, transported an important part of these sculptures to England, where they were eventually housed in the British Museum. For the first time the Western world had direct contact with the great Greek originals of classic art of the period of Phidias. This contact stimulated appreciation and study of the monuments of the Acropolis by travelers and architects, especially those from England. Somewhat later, about 1811, pedimental sculptures of Aegina, now in Munich, were discovered. These greatly enriched the knowledge of Greek archaic sculpture from before the Persian War. Still another discovery of 1811 was the frieze from the temple at Bassae in Arcadia, the work of an artist close to Phidias. A subsequent step toward understanding archaic art came with the discovery of the fine kouros, or statue of Apollo, of Tenea, now in Munich. In 1846, following the discoveries of Newton, several reliefs that had decorated the monumental tomb of King Mausolos of Caria in Halicarnassus were sent to London from Asia Minor. The panorama of Greek art was thus enlarged by acquaintance with these original sculptures from the mid-4th century B.C. Descriptions in literary sources identify the artists as the famous sculptors Timotheos, Skopas, Leochares, and Bryaxis.

At the same time, in Italy, interest in the art of the Hellenic colonies and the Etruscan world was awakening. Etruscan material had already received some attention in the 18th century, but at the beginning of the 19th century its most typical aspects were revealed. In Sicily the Temple of Zeus at Agrigento was uncovered and studied, as was Temple C at Selinunte with its famous sculptured archaic metopes. In Rome the Società degli Iperborei Romani and, in 1828, the Istituto di Corrispondenza Archeologica were founded. The foundations were laid for the classification of Greek painted pottery, until then considered to be Etruscan. Large-scale excavations were begun of the cemeteries of the great cities of southern Etruria, particularly Vulci and Tarquinia, with their painted tombs, and Cerveteri, where the discovery in 1836 of the well-preserved Regolini-Galassi tomb dating from the 7th century B.C. for the first time revealed the Orientalizing qualities of this art.

Two pieces of Greek sculpture of special importance were found toward the middle of the century: the statue of Sophocles of the Lateran from Terracina, of fundamental interest for Greek portraiture, and the athlete wiping away perspiration ("apoxyomenos"), discovered in Trastevere in 1849, which proved to be an excellent copy of one of the most noted originals of the Sikyonian sculptor Lysippos. The systematic study of Pompeii, essential for the understanding of antique city planning and Greco-Roman painting, was begun early in 1860. In Rome itself, in 1859, newly discovered fragments of the sculptures of the *Ara Pacis* of Augustus were integrated with those that had been known since the end of the Renaissance. In 1869 the discovery of the so-called "House of Livia" on the Palatine, with its paintings, opened the way for greater comprehension of Augustan art. In the course of the second half of the century, new excavations in central and southern Italy and in Sicily affirmed the dates already determined for the ancient civilization of the Greek colonies, Etruria, and imperial Rome.

Meanwhile, in the Greek world, systematic explorations conducted by scholarly missions from various European nations revealed the great sanctuary of Zeus at Olympia and of Apollo at Delphi, the Acropolis of Athens and the sanctuaries of Eleusis, Epidauros, Samothrace, and Delos. At Olympia, between 1875 and 1880, the Germans excavated the Temple of Zeus, bringing to light the famous pedimental groups and metopes, and the archaic Temple of Hera where the *Hermes* of Praxiteles was found. Numerous votive offerings of bronze and terra cotta — vases and other objects — from lower strata documented the more remote life of the sanctuary, which began at least as early as the 8th century B.C. It is mainly to these discoveries that we owe the chronological framework of Greek archaic production.

From Delos between 1877 and 1879 came the origins of Greek sculpture: the *Artemis* dedicated by Nikander, and the *Victory of Archermos*. From Tegea came the sculptures of the pediments of the Temple of Athena Alea attributed to

Skopas. At Delphi the work of the French brought to light the Treasury of the Athenians, with its late archaic metopes, the Treasury of the Siphnians, with its friezes in the Ionic style, and important single archaic pieces such as the Naxian *Sphinx* and the celebrated *Charioteer* in bronze, the votive offering of Gelon.

At Athens between 1885 and 1891, the entire surface of the Acropolis was examined. And if the removal of the Parthenon sculptures had attracted the attention of scholars to the problems of the Acropolis in general, this detailed study of the glorious rocky platform was of decisive importance. After the sack by the Persians in 480 B.C., the foundations were filled in not only with archaic architectural sculpture of the earliest phase of the Temple of Athena (Hekatompedon) but also with the famous series of polychrome votive statues of young women (korai) and innumerable other fragments of statues and reliefs. Moreover, enough black-figured and red-figured vases were included to confirm the reconstruction of the development of Attic ceramics.

In this period were also begun the great excavation campaigns in Anatolia, to which we owe in substance our understanding of Greek art of the Hellenistic period. At Pergamon the Germans discovered the Altar of Zeus, with its famous sculptures, and the Sanctuary of Athena; at Priene and Miletos the cities and single architectural monuments of Hellenistic and Roman times; at Trysa (Gölbasi), reliefs from the 5th century B.C. In the last two decades of the 19th century and early in the 20th the discovery of the Sanctuary of Apollo Didymos of Miletos, the Ionic Temple of Artemis at Ephesus, that of Hera on Samos, and other discoveries promoted understanding of the architecture and sculpture of the Ionic world in both the Archaic and the Hellenistic periods.

In a short time, the discoveries spread to other areas of the East, to locations on the borders of the Hellenic world where, as we shall see, the remains of the great preclassical civilizations were found. At the same time, these areas revealed conspicuous traces of Hellenism and Romanism: in Egypt in the archaic colonies of Naucratis and Daphnae, and in the Greco-Roman cemeteries of Alexandria. Especially imposing traces of classical antiquity appeared with the recognition and excavation of the monumental cities of Syria and Asia Minor. Farther to the north, on the coast of southern Russia, the town of Kerch (ancient Panticapaeum) in Crimea, among others, produced abundant testimony of painted pottery of the 4th century B.C., together with innumerable objects of Greco-Bosporan art. Similar finds were also made in the region of Thrace and Macedonia.

In the course of the first half of the 20th century, the understanding of Greco-Roman civilization in Greece and in Italy was deepened and at the same time the physiognomy of the ancient world in relation to Greco-Roman civilization was more completely revealed, through the evaluation of provincial phenomena. Greece, archaic as well as classical, offered up treasures and displayed ever-new aspects in an uninterrupted series of excavations carried out by Greek archaeologists and missions from foreign nations. These excavations took place not only in the more famous historic sites already explored but also in other major and minor centers of the mainland and the islands, above all in the Athenian Agora, at Corinth, Argos, Olinthos, Samothrace, Chios, Samos, Rhodes, Ithaca, and Corfu. In addition, outstanding single objects were discovered, such as the bronze *Sea God* from the Artemision.

Knowledge of Greek art in Italy was unexpectedly enriched by the discovery of the Sanctuary of Hera at the mouth of the River Sele, of Paestum, Locri, Agrigento, Gela, Megara Hyblaea, Spina, and others. The hypothetical dating of the Etruscan and Italic cultures was revolutionized through the finding of such works as the *Apollo* and other terra cottas of Veii and the *Warrior* of Capistrano. Subsequently, aspects of the Greco-Roman and Roman civilizations were illuminated by the great new excavations at Pompeii and Herculaneum, in Rome itself, and throughout Italy (Ostia, Palestrina, Aosta, Brescia, Aquileia, Solunto, Piazza Armerina with its famous *vi* rich in late Roman mosaics, and others).

At the same time, archaeological activity, sporadic in the 19th century, was intensified in North Africa and the European countries that had made up the Roman empire, and many monuments and artistic products were revealed. In a series of grandiose campaigns, the archaeologists of Italy, France, and Spain brought up out of the desert sands and out of the soil the huge ancient cities of Libia (Cyrene and Leptis Magna), of Tunisia (Carthage, Mactaris, Hadrumetum), of Algeria (Hippo, Theveste, Thamugadi, Lambaesis, Cirta, Caesarea), and of Morocco (Volubilis, Lyxus). In Spain, the remnants of Greek colonization, the Iberian civilization, and the provincial Hispano-Roman world were studied through the excavations of Ampurias, Tarragona, Numancia, Italica, Mérida, the areas of Valencia and Alicante, and others. In France, interest centered on the Hellenized and later Romanized centers of the south (such as Marseille, Saint-Blaise, Ensérune, Narbonne, Saint-Rémy, Orange, Vaison) and more generally on the understanding of the Gallo-Roman civilization, particularly the flourishing manufacture of relief ceramics, the most famous of which came from La Graufesenque.

In England and along the banks of the Rhine and the Danube (from Holland to East Germany, Switzerland, Austria, and Hungary, as far as Romania), the topographical and architectural problems of the Roman fortified lines were studied as well as the castles and great military or civil towns near the frontiers, especially Colonia Agrippina (modern Cologne), Augusta Trevirorum (modern Trier), Mogontiacum (modern Mainz), Vindonissa, Augst, Carnuntum, and Aquincum. The superbly original sculpture of these provincial areas was also studied. Thus interest turned to the Roman monuments of Illyria and the Balkans, including, for example, the palace of Diocletian at Spalato (Split) and the cities of Albania.

Paolo Enrico ARIAS

Archaeological interest in the great centers of the ancient world, which had reached the last phases of their development before the medieval eclipse, inevitably brought modern scholars into contact with aspects of civilization and art in which, in so far as they survived, were recognizable the beginnings of Western Christianity. From about the middle of the 19th century, the exploration of the catacombs in the suburbs of Rome, promoted by Giuseppe Marchi and Giovan Battista de Rossi, called attention to the first manifestations of art with Christian content and opened the way to the understanding and study of late-antique style. To the late-Roman monuments already known at that time were added innumerable others, funerary painting, sculpture (particularly sarcophagi), and ivory, gold-, and silverwork, in addition to sacred and civil architecture discovered throughout the entire Mediterranean world and in European countries. The sites include cities that continued to flourish or came into prominence in the Early Christian period between the 4th and 6th centuries. In the West, besides Rome itself, these included Ravenna, Milan, Arles, Tarragona, Trier, Cologne, Hippo, and Salona. In the East, where the traditions of late antiquity were preserved much longer, archaeologists concerned with Christian and Byzantine art found an extraordinarily fertile field, especially exploited in the mid-20th-century decades, beginning with Constantinople and extending to the cities, sanctuaries, and monasteries of Thrace, Macedonia, Greece (Stobi, Salonika), Asia Minor (Ephesus), Syria (Antioch, St. Simeon), and Egypt.

Other discoveries of fundamental importance for the early history of the European peoples concerned the barbaric world of the migrations period. The interest was initiated with the discovery of the tomb of the Frankish king Childeric at Tournai in the 17th century. The systematic explorations of more recent times have centered around cemeteries and individual graves containing equipment, mostly jewelry, pertaining to the various tribes and Germanic cultures, depending on the territory: Franks, Burgundians, and Visigoths in western Europe; Alamanni in southern Germany and Switzerland (the famous tombs of Hassleben near Erfurt and of Wittlingingen); the Goths, Slavs, and Bulgars in eastern Europe (e.g., the treasury of

gold vases of Nagy-Szent-Miklos); the Longobards in Italy. In England, at Sutton Hoo near Woodbridge (Kent), there came to light in 1939 an Anglian funerary complex which may be considered the most splendid among the barbarian finds so far (see ANGLO-SAXON AND IRISH ART). The treasure, attributed to a 7th-century king, consisted of gold jewels with enamels, decorated arms, and silver utensils and was buried in a ship. Also from ship burials, particularly those discovered in Norway at Gokstad and Oseborg, came the principal evidences of Viking civilization and art from the time of the highest Nordic development during the 9th century.

Archaeological research, intensified in the mid-20th century, has contributed to the knowledge of medieval Europe through the study of various inhabited centers in the north and east which are especially interesting from the point of view of city planning and architecture. Examples are the excavations carried out in the Viking castles of Trelleborg and Aggersborg in Denmark, in various cities bordering on the Baltic Sea (Birka, Haithabu, Vineta, Appeln), in the great fortification of King Henry I at Werla in eastern Hanover, and in the Russian city of Novgorod.

THE REDISCOVERY OF PRECLASSICAL ANTIQUITY. *The Near East and the Aegean area.* At the beginning of the 19th century, the knowledge of civilizations earlier than that of the Greco-Roman world was bound essentially to Biblical tradition, which, with its motivations based on faith, was a potent and constant stimulus to explorations of the East, or was limited to Eastern monuments, for the most part Egyptian, in Europe and to the somewhat nebulous information in the isolated reports of individual travelers.

The determining impulse toward direct recognition and archaeological study came from the Napoleonic expedition in Egypt (1799-1800). This expedition had as an immediate consequence, in addition to the series of discoveries that included the famous Rosetta Stone, the compilation of the monumental *Description de l'Egypte* by the scholars who accompanied Napoleon. There followed a 30-year period characterized by a rush of very disorganized excavations, which was often no more than a kind of plunder directed toward gathering and exporting objects. These activities were carried out by diplomats and adventurers, especially in the burial areas of Saqqara and Thebes. As a result, however, certain important discoveries were made, such as that of the tomb of King Seti I (1817), which proved to be extremely significant for the understanding of Egyptian art. Two of the great pyramids were explored, as was the Sphinx of Giza. Much of the material found its way to Europe and formed the first nuclei of the great Egyptian collections in the Louvre and the British Museum and in Berlin and Turin. Soon afterward, however, there were scientific expeditions such as the Franco-Tuscan one of 1828-29, directed by the founder of Egyptology, Jean-François Champollion, that of the Pisan Ippolito Rosellini, and that of the Prussian Richard Lepsius (1842-45).

In 1850, Auguste Mariette's arrival in Egypt marked the beginning of a great period of discovery, beginning with the Serapeum of Memphis and followed by the granite temple of the Sphinx. The appointment of Mariette as Directeur des Services des Antiquités resulted in the regularization of archaeological research, the restoration of monuments, and the creation of the Cairo Museum. His researches were particularly fruitful at the ancient city of Tanis, in the eastern delta, at Meidum, and at Abydos. Subsequently, Gaston Maspero initiated the inquiries that resulted in the discovery of the great repository at Deir el-Bahri in 1881. This find yielded, along with copious funerary furnishings, the mummies of some of the most famous kings of the New Kingdom. The excavations extended to sites not previously explored, among them Akhmim, ancient Panopolis.

At the end of the 19th century, France and England established institutes and missions in Egypt. Excavations were successively taken up by other nations, such as Austria, Germany, Belgium, Italy, and the United States. The English-

nan William Matthew Flinders Petrie, after working at Tanis, Naucratis, and Tell el 'Amarna, discovered at Abydos (1899-1901) the cenotaph of the Thinite kings of the first two dynasties. He also gave the scholars of the world some knowledge of the civilization and art of the predynastic periods. Other great discoveries included the sepulchral cenotaph of Seti I at Abydos and a repository containing hundreds of statues in the foundations of a courtyard of the great Temple of Amen-Ra at Karnak (1903). But the most sensational discovery, the fruit of the efforts of Howard Carter (1922), was that of the tomb of King Tutankhamen, of the 18th dynasty, in the Theban necropolis, uniquely rich for the artistic value of its furnishings.

Later systematic excavations were carried out by French, German, and American archaeologists at Deir el-Medineh in the region of Thebes, in the necropolises of Giza and Saqqara, in the royal necropolis of the 21st dynasty at Tanis, and in the great sanctuaries of Karnak and Luxor. The organization of archaeological activities in their own country has been assumed by the Egyptians, who in 1954 discovered two great votive ships near the Pyramid of Khufu.

Sergio Bosticco

Shortly after the modern exploration of Egypt was initiated, that of Assyria was also begun, with the excavations carried out by P. E. Botta at Khorsabad, the ancient Dur Sharrukin (1842), with the discovery of Nimrud, ancient Calah (1845), and finally with the identification of Nineveh. In the meantime, the cuneiform script was deciphered. As in Egypt, the first archaeological investigations in Mesopotamia had the character of plundering; and many great monuments of Assyrian sculpture migrated to the museums of Europe.

At the beginning of the second half of the 19th century, archaeological research extended to southern Mesopotamia; the ruins of Uruk (Erech), Eridu, Ur, and Lagash were discovered. Missions of various nations began excavations under more rigorous scientific control, and knowledge of the Mesopotamian world was extended many centuries into the past. The Americans explored Nippur; J. de Morgan began the investigation of Elam and especially of the capital at Susa, with important results (the stele incised with the codices of law of Hammurabi was found at Susa). In 1899, the Germans took over the excavations of Babylon and continued working there until 1917. The French brought to light Sumerian art at Telloh, ancient Lagash (1877-1914). But most decisive for the resurrection of the splendid artistic tradition of primitive Mesopotamian civilization was the discovery of the royal tombs of Ur, where systematic excavation was begun in 1922. Intensified research in the decade at midcentury has revealed cultural phases even more remote, as well as monumental centers previously unknown, such as Mari on the central Euphrates.

In the Asiatic territories situated to the northwest of the Mesopotamian plain — north Syria, Asia Minor, and Armenia — new areas were soon opened to scientific inquiry. English and German excavations at Carchemish, Zincirli, and Tell Halaf, the discovery of stone monuments in central Anatolia, and the finds made around Lake Van, revealed the civilizations of north Syria, Phrygia, and of Urartu, which flourished contemporaneously in the 1st century of the 1st millennium B.C. But early in 1906 the exploration of Bogazköy, ancient Hattushash, brought modern scholars into contact with the Hittite world of the 2d millennium and introduced them to Hittite art. The whole development of Anatolian civilization was clarified by a series of discoveries in the archaeological centers of Alishar Hüyük, Alaca Hüyük, and Kültepe, near Bogazköy, in Cilicia (Mersin, Tarsus, Karatepe), in Phrygia (Gordium, city of Midas, and Beycesultan), in Lydia (Sardis), in Caria, and in Lycia, with the active participation of Turkish scholars.

In the Syrian region, where Byblos, Sidon, and Tyre had already offered a quite complete picture of Phoenician civilization, the most notable discovery of our era was the city of Ugarit (today called Ras Shamra), near Laidicea, where the French began systematic excavations in 1929. A palace similar

in type to those in Mesopotamia and Crete was brought to light, along with numerous pieces of sculpture and objects of minor art. These documented conclusively the cultural interrelationships between the Mediterranean world (Crete, Greece, Egypt) and ancient Asia in the 2d millennium B.C. Another area of research, very important in this respect, is that of Alalakh, modern Tell Atchana near Alexandretta, excavated by the English in 1936-40. In addition, the island of Cyprus, from the first disorganized culling of ancient objects in the 18th century to today's scientific missions established by the Swedes, English, and French, has revealed a development of cultural and artistic phenomena extending from the Neolithic era to the Hellenistic period. This development documents the meeting and crossing of currents from Asia, Egypt, and the Occident, especially in ceramics and sculpture. Among the main centers excavated are Enkomi, Lapithos, and Palepaphos. Finally, mention should be made of the Soviet investigations in Urartu (Karmir Blur). The nearby Iranian regions are dealt with below.

Palestine has long attracted scholars for religious reasons, and the travelers who visited it in the past are innumerable. The first excavations were those of Jerusalem, Jericho, and Gezer; in 1903 the Germans made their first excavations at Megiddo; in 1907 they took up the exploration of Jericho. After World War I, great progress was made in the study of prehistoric Palestine, but the excavation of sites already explored was discontinued. Next in importance to Jericho and Jerusalem are Samaria, Lachish (modern Tell ed-Duweir), Beth Shân, Tell en-Nasbeh, and Ai. The new state of Israel sponsored numerous excavations, among which neolithic Jericho and Canaanite Hazor have yielded exceptional results, as has, for the later period, Beth Shearim with its catacombs. Also to be noted are the rewarding discoveries of the Philistine centers along the coast, especially Gaza, and in the interior of Edom and Moab. Recent systematic explorations in southern Arabia have resulted in rich scattered finds of architectural monuments and sculpture.

Giovanni GARBINI

The description of Near Eastern civilization of pre-Hellenic times was first begun with Egypt and Mesopotamia and was then integrated and made precise through the explorations of other regions of Western Asia. The picture was completed, however, only with the revelation of contemporary cultural and artistic phenomena of the Aegean world, which flourished in the same places where Greek civilization later developed.

To Heinrich Schliemann we owe the idea of research based on evidence found in the Homeric epics — the remains of a historical era preceding classical times and reflected in the heroic tradition of the Greeks. In 1870 Schliemann began at Hisarlik, on the northeast border of Anatolia, the excavation of a city which he identified as Homeric Troy. In addition, he discovered a long previous development beginning with its rise in the 3d millennium B.C., with outstanding architectural monuments, objects in gold, and pottery. Shortly thereafter Schliemann also began the exploration of Mycenae in Argolis. There he brought to light, within the circular cyclopean wall, the famous royal shaft graves containing splendid vases and jewels, which he wrongly attributed to the legendary dynasty of Atreus. Later excavations produced a description of the civilization called Mycenaean, largely based on the study of the surviving monuments in Mycenae itself and the discoveries made in the fortified palace of Tiryns, where wall paintings were found, Vaphio in Laconia, where the two famous repoussé gold cups were found, and Thebes.

At the beginning of the 20th century, through the work of English and Italian archaeologists, the pre-Hellenic culture of Crete, to which the conventional name Minoan has been given, was revealed. This revelation helped to explain the Mycenaean civilization of the mainland and to illuminate Aegean protohistoric cultural manifestations. At Knossos, Phaestos, Hagia Triada, and other sites were discovered palaces in a characteristic style of architecture, many containing large-scale paintings, terra-cotta figures, vases, and decorated metal ob-

jects, in a style different from that which dominated the contemporary civilizations of the East and also from later Greek art. Discoveries revealing phenomena more remote from this civilization were made in the Cyclades Islands (with their typical marble statuettes) and are in a sense connected with those of Troy and Asia Minor. During the 1950s the picture of art and civilization of the Aegean expanded and became clearer through Greek, English, French, Swedish, American, and Italian excavations on Crete (Knossos, Phaistos, Mallia), at Mycenae, Argos, Dendra, Delphi, Athens, and the islands of Lemnos, Rhodes, Cyprus, and others.

These studies, those analogously conducted in the Eastern countries, and finally the investigations of prehistoric civilizations in the Balkan Peninsula, Italy and Sicily, Sardinia, and Western Europe, have made possible the organic reconstruction of a succession of cultural phenomena descending from the Neolithic period to the beginning of the classical age. They have clarified the parallel phenomena, the crosscurrents, and the influences between countries of the Near East, the Mediterranean, and Europe which are manifested in this long development. This achievement would not have been possible without the great progress that had meanwhile been made in the field of prehistoric archaeology.

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Prehistory. In the second half of the 18th century it was already possible to establish, in a broad sense, an evolutionary sequence of prehistoric civilizations. Even at that early date typological study of the prehistoric artifacts collected and preserved by researchers had begun, as well as paleontological examination of human and animal fossil remains and observation of the terrain. Tools and weapons of stone and bone, pottery, artifacts of copper, bronze, and finally iron, gave evidence of the development of industry. The remnants of human dwellings were found. Although paleolithic artifacts were generally discovered in alluvial soil or in caves, more finely chiseled flint weapons, pottery, and the first metal objects frequently appeared among the remains of huts. In 1854 the first prehistoric dwelling on wooden piles was brought to light. Finally, tombs were found in pits in the earth, in caverns, in artificial grottoes, and in monuments roughly constructed with slabs of stone. These contained bones of the dead, often with funerary furnishings. In the Bronze Age or at the beginning of the Iron Age, the rite of incineration was practiced and the ashes were placed in urns.

Discoveries and research continuing to the present tend to present the following classification of prehistoric cultures: (1) Paleolithic, corresponding to the Pleistocene era (lasting for several hundreds of thousands of years), subdivided into Lower, Middle, and Upper; (2) Mesolithic, at the beginning of the present, or Holocene, era, with survival of the Upper Paleolithic; (3) Neolithic, referring to the seed-growing cultures (beginning about the 6th millennium B.C.), with a final phase in which there appeared the use of copper, called the Eneolithic or Chalcolithic, which merges with the early Bronze period; (4) the Age of Metals, that is, bronze (in the Orient, the 3d–2d millennium B.C.; in the West, the 2d millennium B.C.) and iron (1st millennium B.C.), during which the beginning of the great historic civilizations occurred.

Only in the last decades of the 19th century did the problems of prehistoric art begin to attract attention, particularly the remains of representational art of the Upper Paleolithic period, which came as an unexpected and surprising revelation. As early as 1860, E. Lartet had begun to collect in France (first in a cave of L'Ariège; then, together with the Englishman Christy, in various caves in the valley of Vézère in Dordogne) bone objects and fragments incised with representations of animals, some belonging to an extinct species. In a well-preserved deposit of the Upper Paleolithic era in the cave of La Madeleine in Dordogne was found, among other things, a slab of mammoth tusk on which the form of this huge extinct proboscidean was finely engraved.

Research and discoveries multiplied; in the caves of Dordogne and the Pyrenees and in many other places in Continental

Europe were discovered not only objects of bone, ivory, and horn (e.g., harpoons, dart throwers, *bâtons de commandement*) with images of animals incised and carved on them but also small sculptures in the round, among which statuettes of women were of particular importance.

The first discoveries of this *art mobilier* took place about twenty years before the other marvelous aspect of primitive art, namely cave, or wall, paintings and engravings became known. A little girl's accidental observation in 1879 of painted figures of bison on the vault of the cave of Altamira near Santander in Spain for many years brought only incredulity and polemics. But soon in France there were discovered figures of animals incised on the walls of the cave of Pair-non-Pair (Gironde), partially covered by Upper Paleolithic deposits. Other engravings and paintings in the cave of La Vache in Dordogne were published in 1895. In this way the authenticity and antiquity of the paintings at Altamira were definitely established. The character of this singularly naturalistic art was defined, and by its geographical distribution it became known as Franco-Cantabrian. Furthermore, it was possible to establish the chronological extension of the whole Upper Paleolithic era, from the Aurignacian to the Magdalenian period. The monuments were multiplied with the discoveries of the famous caves of Font-de-Gaume (1901), El Castillo (1903), Trois Frères (1914), Lascaux (1940), Cougnac (1952), Rouffignac (1955), and others. Along with engraving and paintings, clay sculpture in relief and in the round were found (Tuc d'Audoubert); thus connections were established between cave paintings and *art mobilier*. Paleolithic art of the Franco-Cantabrian type was also found in eastern Spain, especially in the form of numerous slabs of incised stone from the cave of Parpalló near Valencia (1930), and in Italy on the island of Levanzo at the western extremity of Sicily (1947). Paleolithic *art mobilier* seems to have been more widely diffused in Europe, where examples, especially of female statuettes, occur in Belgium, Switzerland, Italy, Germany, Austria, Hungary, and Siberia.

Early in the 20th century another type of prehistoric art was discovered in the mountains of eastern Spain (Spanish Levant) — pictures on rocks or the walls of rock shelters in the open, referred to here as "rock art." These representations portrayed complex groups of men and animals in which the human figures were stylized in a particularly lively and expressive way. Within a brief time paintings were found at Calapatà (1907), Cogul (1908), Alpera (1910), and Minateda (1914), and discoveries continue to be made.

Shortly after these discoveries, examples of prehistoric rock art were also found outside western Europe. In the first decade of the 20th century "Arctic" rock art was discovered in northern and western Norway; however, by the end of the 19th century examples of rock decorations had been discovered in Sweden and Russia (Karelia). The Arctic figure compositions, mostly incised and rarely painted, are generally naturalistic in character and recall Franco-Cantabrian art; but they are considered to be more recent than the Paleolithic period, although their style is also differentiated from the later schematized engravings of central and southern Scandinavia.

In North Africa at the end of the 19th century numerous animal figures were discovered, isolated or in groups and often associated with human figures, incised in the rocks of the Saharan Atlas Mountains (Maghrib). These images, many of them naturalistic, are distributed over the area that extends from the Atlantic coast across the Sahara to the borders of Egypt. More examples of rock art were discovered in several other areas in eastern and southern Africa. Recently, prehistoric engravings comparable to those of Africa have come to light in Sicily in the cave of L'Addaura near Palermo.

Another type of prehistoric art came to light for the first time in 1910 at Las Batuecas in the province of Salamanca, Spain. Here human and animal figures display a schematization that reduces them almost to geometric signs. This kind of schematic art is found not only in Spain — in Extremadura, Andalusia, Sierra Morena, and, in the extreme south, in the provinces of Jaén and Cádiz — but also in other regions of Europe and outside of Europe. It is represented in the signs

on the painted pebbles discovered in the cave of Le Mas d'Azil, France, in a typical Mesolithic stratum.

Other phenomena of prehistoric art tending toward schematization and abstraction were meanwhile revealed as knowledge of Neolithic cultures of the East and West increased. Especially characteristic are the abundant and often excellent pottery, impressed, incised and painted, and the human figurines of geometricized stone.

In prehistoric architecture the megalithic dolmens and like monuments widely diffused in western and northern Europe are of foremost importance. A unique aspect of the most recent Mediterranean prehistory was revealed with the discovery on Malta of megalithic architectural monuments of exceptional structure and proportions along with stone friezes in low relief, geometric and naturalistic statuettes among which are female figures of exaggerated obesity, and pottery decorated with geometric designs.

Discoveries on other Mediterranean islands, such as Sardinia and the Balearics, also show characteristic prehistoric architectural forms, which lasted, moreover, until the 1st millennium B.C.; these are the nuraghi, the talayots, the taulas, and the monumental elongated tombs. Regular excavations of this region were begun only in the 20th century. Also of great importance were the identification and study of the great rock-incised compositions, or petroglyphs, of the Neolithic and Metals Ages, in the mountainous regions of Galicia in Spain, the Alps (Monte Bego near Tenda, Valcamonica), and Scandinavia. The discoveries made in the dwellings and tombs of the Bronze and Iron Ages throughout Europe, beginning with the famous excavation of the necropolis of Hallstatt in Austria (about the middle of the 19th century), brought to light facts of notable artistic interest, especially concerning the decoration of metal objects. Moreover, the revelation of all these manifestations of the most recent Mediterranean and European prehistory is linked to the discoveries, cited above, of the preclassical and early classical civilizations.

Maria Ornella ACANFORA

NON-EUROPEAN CIVILIZATIONS. Asia. Some time elapsed before the science of archaeology as it developed in the West was applied to the antiquities of Asia. The regions of Iran and India were studied first, then Central Asia and the Far East. Here also, the work of scholars was preceded by the reports of travelers. Only in the middle of the 19th century were the systematic classification of historical and religious monuments and the collecting of antique objects begun. Finally, scholars began to excavate according to the techniques developed in the classical world and the ancient Near East. Use was made of dates already acquired from the study of prehistoric and historical civilizations.

Iranian archaeology began with the explorations of the ruins of Persepolis and the first scientific investigations in Elam. In 1897 France acquired an exclusive concession from the shah to carry out excavations in Persian territory. In the same year the *Délégation Française en Perse* began its work in Persia, remaining there until World War I. The comparative stratification of various Persian localities was verified on the basis of the results achieved by the French excavations at Tepe Musyan and in other centers of Khuzistan and was thus correlated with the excavations made in Mesopotamia. Other studies carried out at Tepe Hissar, Shah Tepe, Tureng Tepe, Tepe Giyan, and particularly at Tepe Sialk made definite the correlation and stratigraphic sequence that yielded a fairly precise picture of the evolution of civilization and art in Iran.

Between 1920 and 1930, Sir Aurel Stein followed the path of Alexander toward India, enlarging the archaeological knowledge of south and southeast Iran and Baluchistan. It thus became possible to gauge the cultural affinities of Iran, Afghanistan, Baluchistan, and the Indus Valley. It is a study still subject to correction and revision on the basis of the facts that emerge from the progress of research and from the multiplication of excavations such as those carried out by the Americans and French in Iran (at Persepolis) and Afghanistan.

The international archaeological exploration of Afghanistan was begun in 1922. At that time permission was granted the *Mission Archéologique Française en Afghanistan* to carry out research to determine the area of expansion and the place of origin of the art of Gandhara, to find connections between the Indo-Greeks and the rest of the Hellenistic world, and to trace the contacts of the Indo-Afghan zone with other regions. Hadda, already known in the 19th century, furnished a large quantity of stucco sculpture of the post-Kushan period. At Bamian, the sculptures, rock-hewn temples, and wall paintings were studied about 1920. Paintings and other rock-hewn buildings were found in the valley of Kakrak. At Begram and in neighboring Shotorak, in the years after 1930, there were found Indian ivories, bronzes, and stuccoes, Greco-Roman glass mostly Alexandrian in origin, and Chinese lacquers, all of which attest to the flourishing international commerce carried on in the Kushan period. In 1951 and 1954, excavations at Mundigak under the direction of J. M. Casal brought to light strata that revealed a seminomadic civilization of the 4th millennium B.C.

In Russia, interest in archaeological finds arose under Peter the Great, Catherine II, and Nicolas I, who authorized funds for expeditions and excavations. Only in 1830, however, when Paul Delbrück discovered Kul Obak near Kerch (see above) were the excavations scientifically conducted. In 1846 the Imperial Russian Society of Archaeology was founded, and the activities of archaeologists began to focus on the Hellenized centers of European Russia, the Scythian culture, the Caucasus, and the region of the Steppes. After the Soviet Revolution, archaeological research was planned and directed by the State Academies, which conducted intensive, fruitful missions throughout the territory of the U.S.S.R. Among the numerous discoveries, those at Noin-ula in Mongolia (excavated by Koslov) and the kurgans at Pazyryk in the Altai Mountains are particularly significant. The expeditions of Tolstov in the Khwarizm and of Kiselev in the Sino-Altai regions revealed new centers of civilization and furnished essential data on the proto-history of Central Asia.

Eastern and western Turkistan, Tibet, and neighboring regions were almost completely unknown before 1880. The first important notices were due to the research of the explorer Przhevalski. Later the Swedish archaeologist Sven Hedin discovered important Buddhist antiquities in the region of Khotan, the ruins of the Han period (206 B.C.-A.D. 220) in the desert of Lop, and manuscripts and silks at Lou-lan. Missionaries and explorers tried to penetrate Tibet, and archaeologists moved toward Turkistan. In 1896 a Russian mission discovered in the depression of Lukchun (Turfan) numerous ruins datable to the Han period of the 10th to 12th centuries, as well as precious manuscripts written in Uigur. From 1902 to 1914 four German expeditions brought to light paintings, sculpture, and other art objects along what was the Silk Road and the route of the Buddhist pilgrims between Pamir and China, on the slopes of the Tien Shan Mountains.

From 1900 on, Sir Aurel Stein, under the aegis of the Archaeological Survey of India, visited Turkistan and the ancient cities along the lower limits of the Tarim basin: Khotan, Dandan-ulik, Niya, and Miran. He found in the Lop Nor vast ruins of the Han epoch. Stein's work, the French expedition of Paul Pelliot (1906), and that of the Japanese (1908-09) carried out under Otani and guided by Tachibana, revealed the archaeological importance of Tun-huang. In the same period Russian Turkistan was visited by an American expedition; Pummelly, who had previously worked in Central Asia, discovered at Annau strata that opened the way toward new research on the diffusion and interrelationships of Neolithic cultures. In 1920 and later many excavations were carried out by the Soviet government.

In India, archaeological research began with English domination and quickly developed into a systematic effort throughout the land, focused on the remains of ancient Indian religion. From 1871 onward the Archaeological Survey of India did a great deal of photographic work, documenting and publishing data on rock-hewn sanctuaries, stupas, and other monuments.

Of great importance were the results achieved in the first 30 years of the 20th century: excavations at Pataliputra, the capital of the Maurya empire, and Taxila; English and French campaigns in Gandhara; work by Jouveau-Dubreuil in southern India; discoveries in the Indus Valley of the remains of a 3d-millennium civilization (Harappa, Mohenjo-daro, Chanhudaro).

The megalithic tombs of southern India, on the other hand, had already attracted the attention of scholars; the Iron Age group at Adittanallur was also continuously explored. Roman coins came to light in southern India as early as 1775. After 1941, on the basis of the results of the excavations directed by Casal and Wheeler, it was possible to establish the precise dating of the megalithic tombs, the Roman ruins, and the Andhra pottery found in the stratigraphic excavations at Ari-kamedu (Virampatnam) and Brahmagiri.

On the island of Ceylon, the antiquities of the southern and western coast were noted by several scholars at the end of the 18th century; between 1820 and 1830, there were accounts of ruins of Anuradhapura and Polonnaruwa, and between 1840 and 1845 came the excavations of S. M. Burrows. In 1890, under Bell, the Archaeological Survey of Ceylon, founded in 1873, began systematic cataloguing of the archaeological remains. The first work was carried out in Rajaraja, and, after 1914, the Archaeological Survey extended its activities to the southern part of the island.

In Indochina, although the ruins of Angkor were already known in Europe in the 18th century, the archaeological importance of Khmer art appeared clearly only in the second half of the 19th century through the accounts of Mouhot in 1860 and the activities of Delaporte, who was a member of the expedition of Doudart de Lagrée in 1866-68 and organizer and director of other expeditions. Since then study at the sites and restoration and conservation have been continued fairly intensively by French scholars.

Interest in the ancient art of Siam developed in our century out of Prince Damrong's passion for collecting and the studies of G. Coedès. The area of Angkor having been ceded to the French (1907), the Ecole Française d'Extrême Orient began operations, employing on a large scale, after 1921, the technique of aerial reconnaissance, promoted by Finot, first director of the school. Excavations were carried out at P'ong tuk (1920) and at Petburi.

In Java and Sumatra, the study of the monumental history of the islands was begun by the Society of Arts and Sciences of Batavia, founded in 1778. Under the English government (1811-16) and in the years 1840-45, the Temple of Borobudur and many others were investigated; in the early 20th century, the studies of various scholars, particularly Germans, produced a complete picture of Buddhist and Indian monuments of central and eastern Java.

The history of archaeological research in China and Japan differs from that of other regions of Asia. In China, the ruling classes gave much importance to the historic continuity of the country, not only collecting works of art but, since the Sung period (960-1126), excavating, studying, and cataloguing jade and bronze antiquities. There was an analogous continuity in Japan; the Buddhist temples and monasteries were carefully preserved along with their treasures, and the traditional canons of painting remained well known and full of vitality. Western archaeology came to China only after the discovery of the centers and cities of central Asia; on the other hand, the Chinese themselves were rather slow in adopting modern archaeological methods. Local prejudices and lack of public financial support were obstacles to research. For example, discovery of remains of the Chou period between 1920 and 1930 was due mainly to accident (the bronzes from Hsin-ch'eng and Ch'ang-sha are a case in point) and to clandestine excavations. Nevertheless, there was no lack of important research: the reliefs of the Han period, the Wu tombs, and the tombs at Hsiao-t'ang Shan, discovered by the Chinese at the end of the 17th century; remains of the Han period and Buddhist ruins in north and west China and the region of Nanking, found by French missionaries (1907-17); the Japanese research on Buddhist art (Tokiwa, Sekino, Mizuno, and others, in 1920); the discoveries by An-

dersson, Black, and Wu (1920) of Neolithic painted pottery (at Yang-shao Ts'un and other places in northern Honan, Shensi, and Shansi), black pottery of the Chalcolithic period (Lung Shan, in the province of Shantung) and, in Kansu, painted pottery with elements akin to the terra cottas of Russian Turkistan and the Iranian plateau. In 1928, the Academia Sinica and the Freer Art Gallery of the Smithsonian Institution, through the work of Li Chi and Liang Szu-yung, began excavations at Hsiao-t'un, near An-yang, and discovered royal tombs of the Shang dynasty (1523-1028 B.C.). Other excavations carried out by the Academia Sinica at Hou-kang, near An-yang, revealed superimposed strata of painted terra cottas of the Yang-shao type, black terra cottas of the Lung Shan type, and Shang remains. Finally, excavations at Hsün Hsien brought to light remains of the first Chou period (1027-249 B.C.). From 1949 archaeological research has received ample governmental support (excavations of Neolithic centers in Honan and Shensi, of Hsiao-t'un, of Hui Hsien, and others). Especially noteworthy were discoveries of 24 murals with inscriptions in a tomb at Wang-tu in Hopei; more than 50 bas-reliefs on slabs of stone at Yi-nan in Shantung; much material in Szechwan; paintings and sculptures in the rock-hewn Buddhist sanctuaries at Mai-chi Shan (mid-6th century) and Ping-ling Szu (T'ang period) in Kansu.

The Japanese, in the second half of the 19th century, resuming international contacts interrupted at the beginning of the 17th century, achieved under Western influence a very rapid scientific and technical expansion in the field of archaeological studies. After the first researches were conducted by Europeans, initiative was assumed by local scientific institutions concerned with the beginning of the first phases of the Metals Age. Later they turned their attention also to the early connections between Japan and Korea, Manchuria, and China, and to the pre-metals periods, of which more than 10,000 centers had been discovered by the time World War II began. After the annexation of Korea, Japanese archaeologists carried out excavations in southern Manchuria, in Jehol (China), along the Great Wall, and in Korea, bringing to light various Neolithic centers, paintings, furnishings from the period of Han colonization, and remains of the Silla, Kaokuli, and Paekche reigns.

Jean Johnson YOUNG

America. The most numerous and important discoveries in America were made in the areas of the highest pre-Columbian civilizations: Mexico, Central America, and the region of the Andes. After the information furnished by the historians of the Conquest and later chroniclers, no outstanding discovery was made until 1720, when the ruins of Palenque in southern Mexico were found by A. Del Rio. Little research was done in the 18th century. In the early years of the 19th century, however, A. León y Gama called the attention of scholars to the statue of the god Coatlicue and to the Aztec calendar stone; G. Dupeix and H. D. Castaneda visited Yucatán; A. von Humboldt opened the era of modern research with his work, published in 1810. Between 1830 and 1840, Lord Kingborough brought to light several Mexican codices, and F. de Waldeck visited and described various ruins in Central America.

Important discoveries by J. L. Stephens, among them the remains of the Mayan city of Copán, were published in 1841. Significant contributions to Mayan archaeology were furnished in 1863 by C. E. Brasseur de Bourbourg, who discovered in Madrid the manuscript of the *Relación de las Cosas de Yucatán* of Bishop Diego de Landa, which made it possible to decipher the hieroglyphs of the Mayan calendar. But the true beginning of scientific and systematic study of the Mexican and Central American ruins came in the period of the Second Empire with the work of English investigators: A. P. Maudslay worked especially at Palenque, Copán, Quiriguá, and Chichén Itzá and made valuable collections which are today in the British Museum; T. Maler made studies in the area of Uxmal in southern Yucatán and to the east of Campeche; E. E. Thomson, on the authority of certain passages in Diego de Landa,

discovered at Chichén Itzá the sacred well, or *cenote*; E. Seler described for the first time the pyramid-fortress of Xochicalco and excavated at Cholula, identifying labyrinthine constructions in the interior of the major pyramid.

In 1894 the Mexican government established the Inspección de Monumentos Arqueológicos and in 1916 founded the Dirección de Antropología (today the Instituto Nacional de Antropología e Historia), which initiated, with the collaboration of various foreign institutions, important studies at Teotihuacán, Tenayuca, Catixtlándia, and Malinalco in Mexico; Chichén Itzá and Uxmal in Yucatán; Tapin and Los Tuxtlas in Vera Cruz; Cholula in Puebla; Monte Albán, Mitla, and Alta Mixteca in Oaxaca. A mission from the British Museum worked in British Honduras.

In South America, Colombian archaeology developed modestly, the finds consisting of pottery, small objects of gold, and crockery, almost all coming from tombs. In Ecuador, research began in 1892 and was followed in the first years of our century by other investigations at La Plata Island and on the coast of Manabí and Esmeraldas. After the studies of M. Uhle in various regions of the plateau and at Manabí and Esmeraldas, exhaustive archaeological work was carried out, particularly in the provinces of Guayas, Manabí, Esmeraldas, and La Libertad; stratigraphic sequences were also established at Cerro Narrio, Cañar.

In Brazil, interest centered mainly around the island of Marajó, where remains belonging to at least seven different cultural levels were brought to light; rock paintings and engravings, found particularly along river beds, were also studied. In Peru, after the descriptions of 19th-century travelers, the work of M. Uhle in the years 1893-1934 produced the first and most notable studies and scientific discoveries, including the stratigraphic classification of Pachácamac and of Nazca pottery. The region of Cuzco, already fairly well known through the descriptions of the historians of the Conquest, became the object of really organized scientific expeditions only in 1911-15; under the direction of H. Bingham, the remains of the city of Machu Picchu and other discoveries were made.

Other studies in the province of Cuzco were undertaken later by the Museo Nacional of Lima. At Chavín de Huántar, in the basin of the Marañón, A. Raimondi discovered in 1873 the well-known stele which today bears his name. Subsequent excavations were carried out in the same locale by J. C. Tello and others. In Bolivia, the ruins of Tiahuanaco, known since the time of the chroniclers (Garcilaso), were intensively studied beginning in the late 19th century.

Outside these areas, studies and notable archaeological discoveries were made in the first 30 years of the 20th century in Alaska (decorated bone and ivory objects from Cape Prince of Wales, Little Diomedé Island, and Punuk Island). In the second half of the 19th century, archaeological discoveries were made in the valleys of the Mississippi and Ohio Rivers (tumuli and pyramidal earth structures called mounds).

Bruno MANCINI

Africa. Archaeological studies in North Africa are referred to above. In Nigeria, discoveries began in 1910 at Ife, where L. Frobenius brought to light the famous sculptured brass head supposedly of Olokun, in addition to statuettes and stone objects. Only in 1938 did occasional excavations reveal new brass sculptures, the total number of which reached 19 in subsequent years. The stone statues of Esie and Offa, perhaps known to the indigenous population since 1780, were rediscovered in 1933. Minor discoveries were made in a number of places, in the two decades around midcentury, including Tada, Jebba, and Mopti. Benin, already known in the 15th and 16th centuries and described in great detail by Dutch 17th- and 18th-century writers (the famous bronze heads were first described by D. von Nyendael in 1704), was visited by various European travelers and students until the punitive British expedition in 1897. The zone south of Lake Chad was only recently explored for archaeological purposes by J. P. Lebeuf and A. Masson-Detourbet, who discovered, principally

at Tago, clay statuettes that certainly date from before the penetration of Islam and are attributed to the prehistoric culture of the Sao. The first reports of the ancient monuments of Ethiopia and Eritrea came from missionaries and travelers early in the 17th century; in the first half of the 19th century came the more precise notices on Aksum, Gondar, and central Ethiopia in general. Archaeological remains in Cohaito (ancient Adulis), vestiges in Rora (Eritrea), the monolithic sanctuaries of Lalibela, stone steles in central Scioa, and rock art at Addi Alauti, were illustrated in the second half of the 19th century. In the first decade of the 20th century, a German expedition made the first systematic study of Aksum and other localities of Tigre. But in the meantime, Italian scholars had begun extensive research, collection of data and objects, and excavations in Eritrea, at Adulis, Aratu, Foru, Mameruc (in the area of Cheren), and Dabra Baat; in Goggiam; in Harar in the territory of Gurage, Soddo, Walamo, and Sidamo; and in many other locales. Obelisks, steles, southern Arabian sculpture, and rock art were discovered. In 1952, an archaeological division was instituted at Addis Ababa under the direction of French scholars, who conducted very productive studies in the region of Tigre. The ruins of Zimbabwe in Rhodesia (mentioned earlier by ancient Portuguese travelers and rediscovered by an ivory merchant, Adam Renders, in 1868) were described for the first time in 1871 by K. Mauch and subsequently by Theodore Bent and R. N. Hall. Systematic excavations were conducted, after the British occupation, chiefly by R. MacIver and G. Caton-Thompson, who attempted scientific dating and classification.

Oceania. The first archaeological discoveries on the Australian continent were accidental; only in recent years have methodical investigations in caves and rock shelters brought knowledge of numerous manifestations of rock art. As early as 1814, however, Matthew Flinders described the gallery with zoomorphic rock paintings of Clacks Island, near Princess Charlotte Bay. In 1841, G. Grey discovered in a cave near the upper Glenelg River anthropomorphic figures of the style called "wondjina," and J. Mathew visited numerous shelters and caverns in 1893 and the following years.

In the rest of Oceania the most important discoveries were those connected with Easter Island. The first explorations (Roggeveen, 1722; F. Gonzales, 1769; J. Cook, 1774) made passing reference to the presence of megalithic platforms (marae) and to colossal anthropomorphic statues made of trachyte. But J. F. de la Pérouse (1786) gave the first description with related drawings. Later these monuments were visited by A. Pinart (1877) and by an American expedition from the Smithsonian Institution (1887-88). Wooden tablets with pictographic engravings were noted by P. Eyraud in 1864.

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ARCHAIC ART. The term "archaic" denotes the earliest phases of any art or culture, but among modern historians of European art it is usually applied to the early artistic development of the Greek world, when many of the main concepts of Western art were born.

SUMMARY. Period and characteristics of archaic art (col. 579). Architecture (col. 580). Architectural sculpture (col. 583): *The pediment; The Ionic frieze; The Doric frieze; Other elements of architectural sculpture.* Free sculpture (col. 588): *Kouroi; Korai; Other sculptural types.* Sculpture in relief (col. 596): *Votive reliefs; Funerary reliefs.* Terra cotta (col. 598): *Architectural decoration; Statuettes.* Bronzes (col. 601). Coinage (col. 605). Gems (col. 606). Jewelry (col. 608). Carvings in ivory, bone, amber, and wood (col. 609). Painting (col. 610). Pottery and vase painting (col. 613): *Eastern Greek pottery; Western pottery: a. Laconia; b. Corinth; c. Chalcidian ware; d. Attica.* Development, diffusion, and survival of archaic art (col. 620). Conclusions (col. 622).

PERIOD AND CHARACTERISTICS OF ARCHAIC ART. Not all scholars use the term to cover exactly the same period or the same area. All would agree that the archaic period ended in the first half of the 5th century B.C., but it can be regarded as beginning at any one of three approximate dates. In the widest sense its origins can be traced in the Bronze Age, before the middle of the 2d millennium B.C., when the so-called "Mycenaeans," now known from a partial deciphering of their written records to have been Greek, dominated the Aegean and were in touch with the great empires of Egypt and Anatolia (see ASIA, WEST: ANCIENT ART; EGYPTIAN ART; MEDITERRANEAN PROTOHISTORY; CRETAN-MYCEANAN ART). The second date is about 800 B.C., when — after some centuries of upheaval and invasion, the exact nature of which is still unclear — Greece had developed an art whose angularity has earned it the title "Geometric" (see GEOMETRIC STYLE). Renewed contact with Eastern civilization stimulated it to exuberant growth, at first in close imitation of Oriental models (see ORIENTALIZING STYLE), but, after their assimilation, in a distinctively Greek phase. It is to this last phase, when, about 650 B.C., the Greeks first began to carve sculpture of large size in marble, that the term "archaic" in its narrowest sense can be applied, and it is in this sense (unless the context shows otherwise) that it is used in the following article. The end of the phase is commonly set at 480 B.C., the date of the sack of the Acropolis at Athens by the Persians. Among the sculptures excavated there, those carved shortly before the sack already display many of the marks of the succeeding early classic period, and the date of the change is confirmed by other evidence — for example, that of coins, which, like the vases and gems, underwent a parallel development of style. Elements of the archaic may well have lingered on in places more remote and less progressive than Athens, but the transition to the classic was complete everywhere before 450 B.C. (see CLASSIC ART). There is some latitude also in the area within which the archaic can be regarded as holding sway. Apart from mainland Greece and the Greek colonies of Asia Minor, Sicily, and southern Italy, the influence was strong and direct in Cyprus, Etruria, and Achaemenid Persia, although their reactions to it were diverse; and its impulse was felt with varying force on all the shores of the Mediterranean, even in distant Spain.

Archaic art displays certain distinctive characteristics. Religion was its motive force, and its dedications — whether political, athletic, or funerary — were primarily religious. Its highest manifestations were the creation of the temple and the adornment of sacred places. Its repertory was drawn from myth, from the deeds of gods and heroes in the past, and not from those of contemporary human beings; its treatment of them was narrative, dynamic rather than static, and designed to exhibit the successive episodes of a story. It created and transmitted a number of fixed artistic types, of human beings, animals, monsters (sphinx, griffin, Gorgon, centaur, siren), and of stylized plant forms. It made an analysis of the individual figures and of the individual details of each figure and thus produced an assemblage of separate elements, rather than a single view of the whole, and it ignored the effects of foreshortening or regarded them only in details. It tended to transmute the drawn or sculptured forms into decorative and geometric abstractions and was addicted to frontality, symmetry, and repetition.

It would, however, be a mistake to regard archaic art as a single homogenous phenomenon, consistent in its products and

its style, in the same sense as the classic art of the 5th and 4th centuries B.C. Within the general framework described above, Greek archaic civilization presents the picture of a number of parallel, not identical, artistic tendencies corresponding to the variety of racial stocks (Ionic, Aeolic, and Doric) and to the numerous centers into which the Hellenic world was divided during the first centuries of its history, both in the mother country and in the colonies. Local traditions were distinct and tenacious, especially in the kind of objects produced by craftsmen-artists (the painted vases, for example), where a variety of styles is apparent. These local strains crystallized into regional groups of varying extent and varying speed of development, especially notable among them being the Cretan, the Peloponnesian that was partly derived from it, the eastern Greek of the Aegean Islands and of the Aeolian and Ionian cities of Asia Minor, and the Attic (see ATTIC AND BOEOTIAN ART; GRECO-BOSPORAN ART; GREEK ART, AEGEAN; GREEK ART, EASTERN; GREEK ART, NORTHERN; GREEK ART, WESTERN; PELOPONNESIAN ART). But it was especially in the more advanced phases of archaic art that the artistic prestige of certain centers and the movements of artists tended to produce a stronger unification of styles, foreshadowing the approach of that harmony which marked the classic period.

It has long been discussed among scholars whether Greek art was a spontaneous product of the Greek genius, emerging from the darkness caused by the collapse of Mycenaean civilization and creating new concepts, new artistic types, and new forms; or whether — and how far — it drew its inspiration from the earlier and contemporary cultures of the East. A further point at issue is whether, among the numerous centers of art, priority should be given to the eastern Greeks — in other words the Ionian cities of Asia Minor — or to the Dorians of Crete and the Peloponnesus. The problem is made more complex by the undoubted fact that Ionian art, in both its subjects and its conception of form, shows strong links with the older native art of Asia Minor, while the art of the Dorian centers appears to be more inventive and independent of Oriental tradition; the latter, therefore, is often regarded as the more genuine expression of the Greek spirit. On the other hand, it would be impossible to deny to Greek creative power — and to regard as less than Greek or even as a Greco-Oriental hybrid — the splendid flower of Ionian and Aeolian thought, which at this very time attained such heights in the fields of poetry and science.

Recent critical opinion tends to resolve these apparent contradictions by regarding the birth of archaic art as a vital process — an assimilation of the inheritance of Oriental motifs and a transmutation of their formal treatment, operating in different ways and with differing intensity in the various parts of the Greek world (earlier and more vigorously in Crete and the Peloponnesus, more weakly in eastern Greece) but destined by its variety and flexibility to impose on the older traditions a stylistic conception that was entirely new and pregnant with future developments.

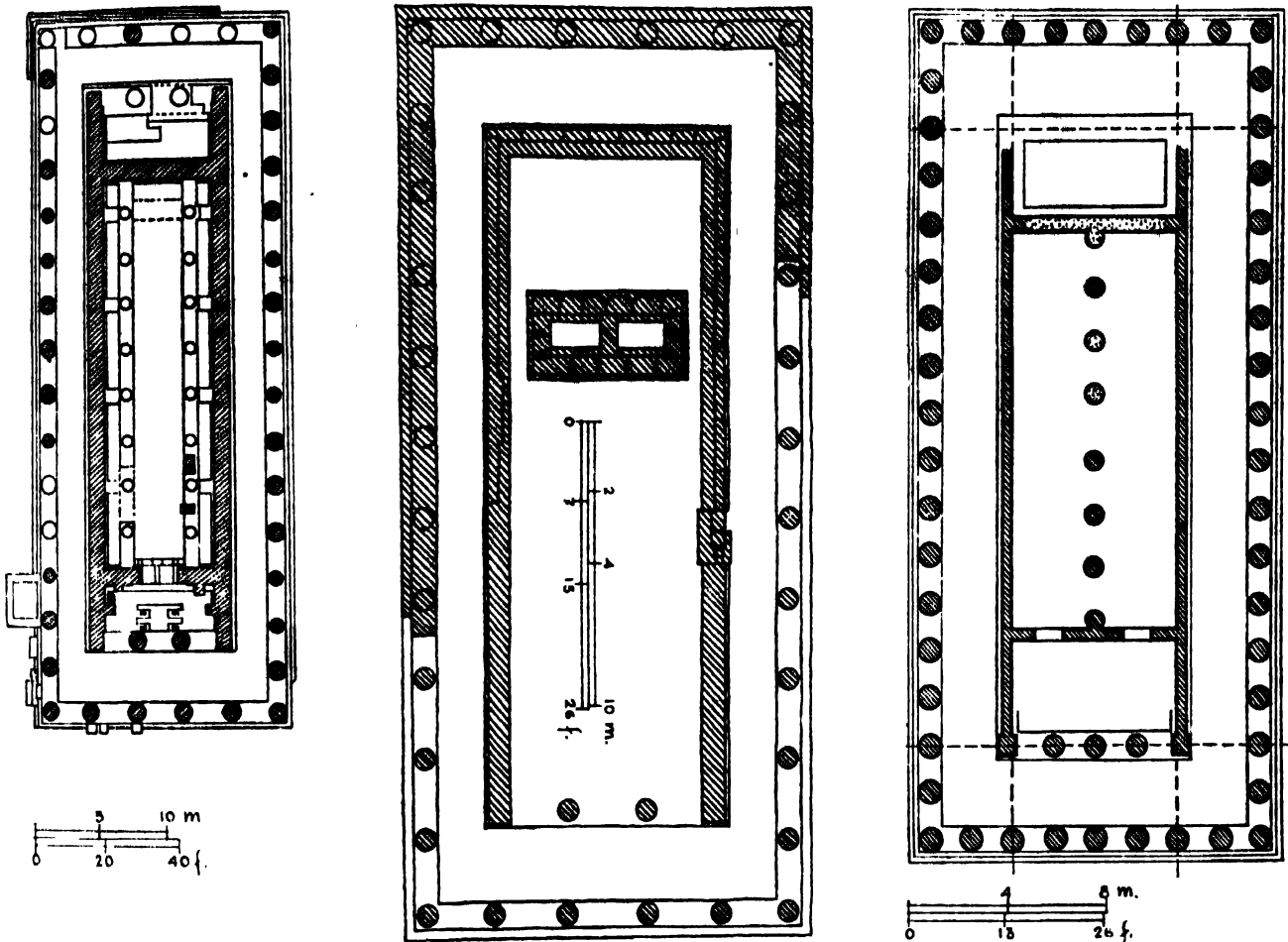
The same innovating process extended with a slower and weaker impulse to those non-Greek communities affected by Greek commercial and cultural expansion. Here the Oriental or the local prehistoric traditions offered greater resistance to change, and here archaic art was later in developing and was more hampered by convention, the result being mixture and uncertainty of style. But some of these territories, notably Cyprus and Tyrrhenian Italy (Etruria, Latium, and Campania) at length entered decisively into the sphere of the Greek archaic, although with distinct native characteristics (see ASIA MINOR, WESTERN; CYPRIOTE ART, ANCIENT; ETRUSCO-ITALIC ART).

ARCHITECTURE. The archaic age of Greece saw the origin and almost the full development of the two orders of architecture, the Doric and the Ionic, which are today known throughout the civilized world; while the third, the Corinthian, which was not invented until the classic period, is an offshoot of the Ionic. Doric is extremely rare east of the Aegean, and Ionic in the mainland and the west. Both orders, borrowing something from foreign prototypes, derive their distinctive forms from wooden construction. These wooden forms were translated into stone

when growing wealth and technical advance enabled cities to erect large buildings in this material, and, although they then no longer closely corresponded to the structural reality, they served as the elements of a readily understood esthetic language. Especially characteristic are the forms which Greek architects gave to the column. The Doric column, in its developed stone form, springs directly from the platform of the building, in the archaic form tapers sharply upward, and has broad, shallow flutes. The Ionic has a more nearly cylindrical shaft with narrow flutes and rests on a substantial, sometimes lofty, molded

the larger buildings, unpretentious smaller structures, sometimes of wood, which did not strictly observe the rules of the orders, and among these there must have persisted that variant of the Doric column with smooth shaft and base from which the Etruscan column derives.

The most common kind of large building was the temple, sometimes of a size surpassing all but the most grandiose projects of later times. The *Ionia* Temple of Hera at Samos, with a veritable forest of columns — 126 in all — and that of Artemis at Ephesus were particularly magnificent, but they



Plans of Greek temples. Left to right: Olympia, the Heraion; Kerkyra (Corfu) temple of Artemis; Paestum, "Basilica."

base. Both Doric and Ionic were in their early stages more exuberant and less standardized in details than they were later to become; in the late archaic there was a tendency toward canonical forms and to that conscious austerity which culminated in the classic period. For instance, the echinus of the Doric capital at first had a full, spreading section, and its lower part was richly ornamented; at the end of the period the curve was steeper and flatter and the lower part ornamented sparsely or not at all. The early Ionic capital tended to have a softer, fuller echinus and more extended volutes than the later. Experimental forms are found, especially on columns that were not parts of a building but supported votive objects. For example, rosettes appear instead of spirals in the volutes on some of the capitals of the Ephesian Artemision; and in the capitals of votive columns from the Athenian Acropolis the volutes are sometimes not horizontal but spring vertically upward like an opening lily. This upright form, derived from a design used much earlier in Egypt, Mesopotamia, and Syria, has been found also in buildings. It had a limited lifetime in a limited area of northeastern Greece and the adjacent parts of Anatolia and is usually called Aeolic. Doubtless there were always, alongside

were rivaled by the great Doric structures of the Greek colonies in the west such as Paestum (PL. 333). Temples were always of post-and-lintel construction; the existence of the arch in other countries was known, but it was not used at this period by the Greeks. Temples tended to be long and narrow and, because of the difficulty of spanning the main chamber without intermediate support, often had a row of columns down the central axis (FIG. 581). The temple was the house of the god, not a place of assembly for his worshipers, who normally congregated outside, and it therefore took the form of the Greek house (though some temples may reflect the plan of the Mycenaean megaron) — a room with a front portico formed by the extension of the side walls forward, its roof being commonly supported by a couple of columns between these projecting side walls. When built to face the south, this portico gave shade in summer when the sun was overhead but admitted the winter sunlight. The temple was usually oriented toward the east, but the portico was retained. The main chamber was used to house the cult image, but — as in a house — there was sometimes a second chamber behind, serving as a storeroom, treasury, or depository for records. This might also have a portico forming

a second entrance at the back of the building. The addition of a row of columns, completely surrounding this nucleus and connected to it by extension of the roof, produced the most characteristic Greek temple plan. Some temples had a row of columns in front only, or at front and back. The peripheral colonnade existed (as a wooden veranda) around a primitive building at Thermon in Aetolia which has been dated as early as the 10th century B.C.

The Etruscans developed a separate order of architecture, possibly derived from primitive Doric, with some borrowing from native Italian building practice. The fragmentary evidence seems to show that the columns were usually of wood, while bases and capitals could be of stone. Columns were widely spaced, and the timber roof projected strongly at the sides. Terra cotta was freely used for revetment.

Temples with a single cella are found also in Italy, but one form of temple plan was either invented by the Etruscans or borrowed by them from early Italian neighbors and was dictated by one of their religious cults. It had three cellas side by side, as described by Vitruvius, each housing a deity, and in front a portico of columns, usually in two rows of four each. The building was set on a high platform facing south and approached by a flight of steps. This plan was adopted in Rome. The earliest temple of Jupiter on the Capitoline hill was erected under the last Etruscan kings of Rome; its terra-cotta ornaments and the terra-cotta cult statue of Jupiter were by an Etruscan sculptor; and it housed the Etruscan triad of deities whom the Romans called Jupiter, Juno, and Minerva.

Just as the earliest columns were of wood, so the earliest Greek buildings were of wood and sun-dried brick. But when stone replaced wood for the main features, sun-dried brick continued to be used and was set on lower courses of stone, which would offer a firmer foundation and would resist the wear to which the foot of a wall is commonly subjected. Such buildings needed a sheath of more durable material when they were exposed to the weather, and this was usually provided by fired clay; there were not only terra-cotta tiles for the roof (succeeding the older thatched roofs plastered with clay), but also terra-cotta friezes and tile ends with decorated reliefs.

A building which neatly illustrates the evolution of Doric style and building construction is the Temple of Hera at Olympia (PL. 331). When Pausanias saw this in the 2d century, its general form was that of the original building, which had been erected about 700 B.C.; but he noticed that one of the columns in the portico at the back was of wood. The inference that all the columns had been of wood is confirmed by the diversity of the stone shafts and capitals which have now been excavated there and which (each carved in the style of its own period) evidently replaced the wooden columns as these fell into decay.

The use of marble for an entire building was rare in archaic times, partly because of its cost, partly because of difficulties of transport. This is confirmed by the credit given to the exiled Athenian family, the Alkmaionidai, when they rebuilt one façade of the Temple of Apollo at Delphi in marble instead of in the more modest limestone. Its use, however, was increasing where cost and distance did not forbid. When the Siphnians in the later 6th century B.C. discovered rich mines of precious metal, they not only erected a Treasury at Delphi made entirely of Parian marble but hastened to construct or face their public buildings with it. The Acropolis at Athens tells the same story: marble gradually superseded limestone. But most cities had to be content mainly with local stone coated with a fine stucco of powdered marble.

Archaic buildings were brilliantly colored. The shafts of columns were left white, but moldings, details of capitals, and other elements were brightly painted and often patterned. With the colored sculptures, the general effect was that of a plant blossoming as it grew toward the light.

ARCHITECTURAL SCULPTURE. The custom of decorating buildings with sculpture had its origin outside Greece at a period earlier than the Greek archaic. Some of the Greeks knew of this practice and borrowed features from foreign, especially Eastern, prototypes, but they quickly devised a system of their

own, usually limiting the sculptural decoration to the nonstructural, or apparently nonstructural, part of a building. Although some buildings had no sculpture at all, and although even in the classic period the placing of sculptural decoration was never stereotyped, by the end of the archaic period it had become customary to use sculpture in three positions on a temple: in the pediment, the long triangular member created above the horizontal entablature at each end of the building by the pitch of the roof (said by Pindar to have been a Corinthian invention); at the top and ends of the gables, where figures such as Gorgons, sphinxes, and Victories were used to break the sky line; and as a frieze above the architrave. Doric and Ionic buildings differ in their use of the frieze: the Ionic frieze was derivative, whereas the Doric has some claim to be considered indigenous. The Ionic frieze was continuous, but the Doric was interrupted by the triglyphs so as to form a series of separate panels, oblong or square in shape.

In the Ionic order sculpture is also sometimes found in high relief around the lower part of a column, and occasionally a human figure is substituted for a column as an architectural support (PL. 357); both these uses are of Oriental origin.

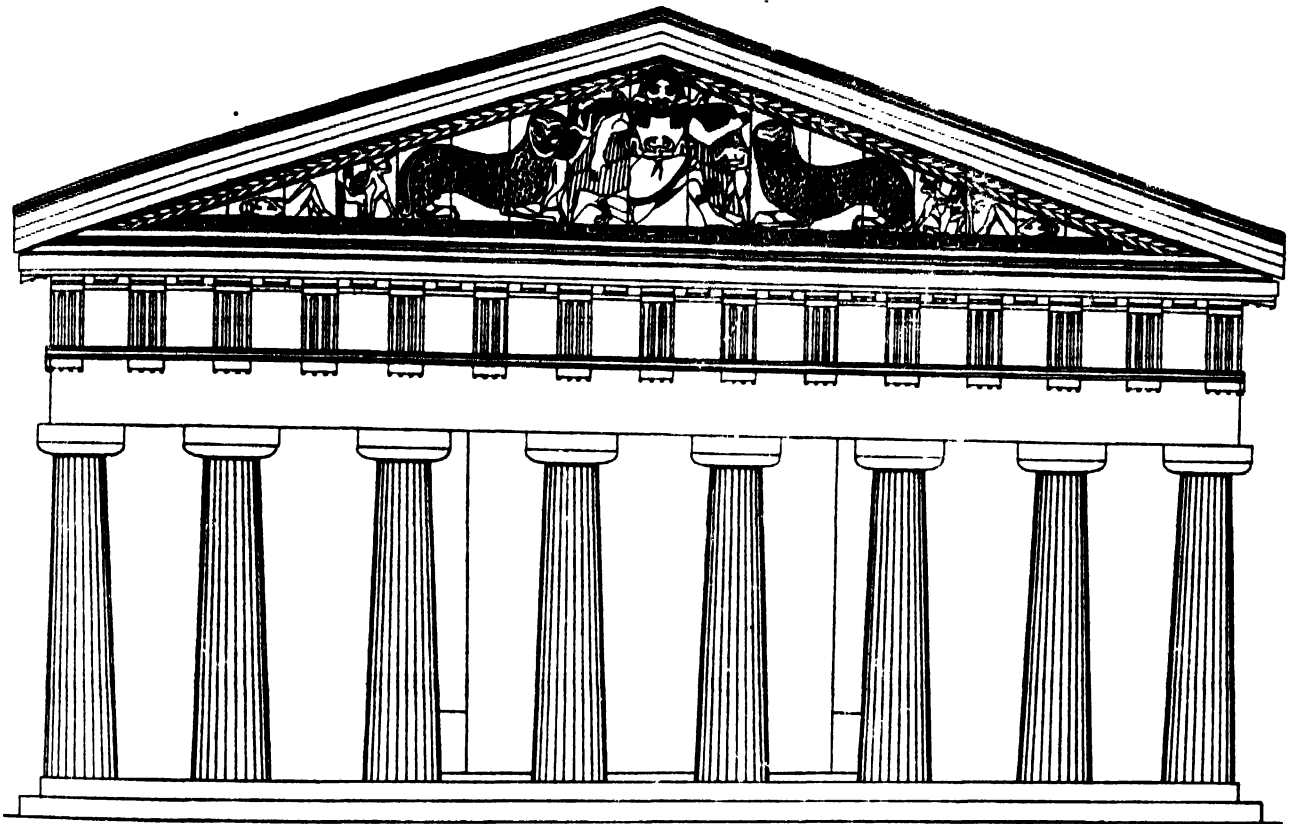
The pediment. The history of the development of pedimental sculpture is that of successive attempts to fit animal or human figures into an awkward frame — awkward in that it was sufficiently high in the center to demand figures of considerable size, yet narrowed rapidly toward the corners, necessitating usually either a change of scale or contorted grouping. The problem is less acute when the building is small or when the design is in very low relief. Those pediments which have survived form an interesting series of such attempts. An entirely satisfactory solution was reached only toward the end of the period in the Temple of Athena Aphaia at Aegina (PL. 332). The better preserved of two pediments from a temple of Artemis in Kerkyra (Corfu), dating from about 600 B.C., has the Gorgon Medusa in the center to the full height of the pediment; her head is, in fact, carved from the apex stone of the pedimental frame (PL. 343; FIG. 585). The Gorgon or the Gorgon's head was highly valued as an avenger of evil, and in this position she gave protection where it was most needed, to the main roof beam. In a 6th-century temple at Selinous (now Selinunte) in Sicily, the center of the pediment is filled by a Gorgon's head more than 6½ ft. high. At Kerkyra, Medusa is accompanied by Pegasos and Chrysaor, her offspring (whose small scale is therefore not disturbing), and is flanked by two lions or leopards whose heads conveniently fill the lofty frame and whose bodies are sufficiently narrow to be accommodated as the height diminishes. Animals are appropriate to Medusa, who, as goddess of nature and goddess of death, is mistress of the animal world. In the corners the sculptor then introduced an unrelated subject, the battle of gods and giants. The figures are of smaller size and the episodes are separated from each other by the central group, so that the whole pediment, despite the grandeur of its main composition, is torn apart by discrepancy not only of scale but of subject.

A series of fragmentary pediments excavated on the Acropolis at Athens covers the last three-quarters of the 6th century. They vary much in height of relief, ranging from what is little more than a painting enhanced by a carved outline to figures that are virtually in the round (PL. 337). All are in limestone except the latest, which is of marble. The earliest is perhaps that in exceedingly low relief which shows Herakles fighting the Hydra (detail, PL. 344): it may be dated about 575 B.C. Although the monster satisfactorily fills one half of the pediment and the protagonist holds the center of the stage, there is little attempt to solve the problem of the diminishing field on the other side, which is occupied mainly by a chariot. The charioteer is of miniature size, and the horses, even though shown impossibly small, are painfully constricted by the sloping frame. The crab, ally of the Hydra, occupies the corner, and serves to remind us, as do the Hydra's tails in the opposite corner, of the usefulness of animal shapes in such difficult compositions. The tails of snakes or snakelike tails were constantly used to fill the corners, and in the pediments of small buildings, such

as the fountain houses shown on vases, a central gorgoneion flanked by snakes makes a satisfactory if modest composition.

The truth is that the scheme of animals placed opposite each other, which is of Eastern origin, is the easiest and most suitable expedient for decorating a triangular space, and it was perhaps one of the earliest pedimental compositions: we find it freely used in small objects imitating buildings and — at the confines of the Greek world — in the sculptured pediments of the rock tombs of Phrygia and in the miniature painted pediments in Etruscan tombs. Animal groups were a feature the Greeks had taken over with enthusiasm, and the group of a lion or lions tearing a bull or stag — popular throughout

seems that here no animals intruded (PL. 367). A deity thus situated protected the vital part of a building, just as a Gorgon or gorgoneion did, and towered above the scene but aroused no feeling of disquiet by disproportionate size, for that is naturally greater than mortal. The principle once recognized, this arrangement became the rule, being varied only by the use of two central deities instead of one. It was used in at least one pediment of the Temple of Apollo at Eretria, about 500, representing a battle of Greeks and Amazons at which Athena presided and a conspicuous group showed Theseus carrying off Antiope (PL. 369); and, most successfully, in both pediments of the Temple of Athena Aphaia at Aegina between



Kerkira (Corfu), temple of Artemis, reconstruction (from Rodenwaldt, *Altärische Bildwerke in Korfu*, 1938).

antiquity on gems — constantly appears on pediments until the end of the 6th century. The grandest is one carved about 550 B.C., consisting of two lions tearing a bull who lies between them, and this may have been the central feature of a pediment of the Temple of Athena on the Acropolis, flanked on one side by Herakles and the Triton, on the other by the three-tailed, three-bodied monster known as "Bluebeard" from the color that still survives and sometimes identified as Geryon (PL. 347). In another, roughly contemporary, pediment showing the introduction of Herakles to Olympus, where the figures are in very high relief, Zeus is seated in profile slightly to one side of the center, and Hera, facing the spectator, almost in the center, but the standing Herakles is inevitably too small in scale.

As the archaic age developed, it became clear to designers that a god or goddess was appropriate both in scale and function to the central position. In a pediment from the Treasury of the Siphnians at Delphi about 525, Athena aids Herakles in his struggle for the tripod; but the subsidiary figures and a chariot farther out from the center are ridiculously small. In the temple at Delphi, ten or twenty years later, Apollo stands in a chariot facing the front, but the corners are still filled with irrelevant animal groups. In the marble pediment of the Peisistratid Temple of Athena on the Acropolis, about 520, Athena, or perhaps Zeus and Athena, are in combat with giants; and it

500 and 480. Here, in each pediment, figures advancing stooping, kneeling, crouching, and lying are successfully contrived, without change of scale, to fill every portion of the field, and the unity of action is complete: all are taking part in one event at one moment of time. The whole scene is dominated by a central Athena, whose slightly larger size and monumental pose serve to define her status and lift her above the hurly-burly of battle.

The Ionic frieze. The origin of the Ionic frieze, which is not a Greek invention, has been much discussed. It is derived, according to one view, from the stone reliefs in Egyptian tombs and temples; according to another, from Mesopotamian reliefs in glazed brick or metal. Against the Egyptian origin has been urged the fact that Egyptian reliefs were rarely confined to a particular part of the building but were placed sometimes in one area of the wall and sometimes in another; and that Egypt was a country of stone buildings, whereas the Ionic frieze has the characteristics of a more resistant revetment on a perishable material. In favor of the origin in Mesopotamia it is pointed out that a common form of structure in a country where there is great heat, moderate rain, humid soil, and little building stone is sun-dried brick roofed with beaten clay laid on beams, and that the forms of the Ionic order reflect a structure of this kind. In such a building the edge of the roof is especially

vulnerable, and in Mesopotamia and later in Assyria and Persia it was commonly protected with a decorative frieze made either of metal (copper or bronze) or glazed terra cotta. In Asiatic Ionia, in Lydia and Phrygia, are to be found plaques of terra cotta with ornaments and figures in relief. These perform the function of protecting the upper part of the roof, built as it is of materials with a tendency to deteriorate. This same protective system is also found in the archaic temples of Etruria and Latium (so-called "Ionic phase"). The Ionian Greeks were acquainted with buildings protected in this way and imitated them, using terra-cotta plaques with fired decoration in color. But even where Ionic architecture was completely translated into stone, it still preserved the characteristic frieze (which even appears occasionally in the Doric order also, as at Assos).

The position of the frieze was not always identical, and on one of the most famous Ionic buildings, the Temple of Artemis at Ephesus, the frieze took the form of a parapet through which the lion's-head gutter spouts also projected. Another abnormal use was the frieze on the pillar tombs of the Lycians, a non-Greek race with strong Hellenic elements in their culture, who sometimes employed Greek artists. These tombs are tall, square shafts round the top edge of which there is a band of relief sculpture. The primitive-looking earliest examples, the "Lion Tomb" from Xanthos (PLS. 529, 536) and those from Isinda, date from between 600 and 550. Some fifty years later is the "Harpy Tomb" (PLS. 372, top, and 537), where the style is Greek, although the human-headed birds (soul birds or sirens, rather than harpies) who are shown carrying away the dead and the emphasis on the cult of two female deities (Lycia was matriarchal) and on that of the heroized dead give the monument a somewhat un-Greek flavor.

There exists one well-preserved example of the orthodox use of the Ionic frieze, on the Treasury erected by the Siphnians at Delphi about 525 B.C. as a consequence of their having discovered rich deposits of precious metals in their island. The clumsy pediment at the back of this building has already been mentioned. The frieze is far more competent and is an important document for one of the Ionian styles of the period, particularly interesting for its composition and its treatment of the third dimension. It runs continuously round the building and is divided into four subjects, one to each side. The south frieze is fragmentary but contains some fine studies of horses. On the east the subject, a Homeric battle scene, is further subdivided into its human and divine aspects. The gods are shown watching the contest, but the designer had no means of indicating the spatial relationship of the two scenes and could only set them side by side, so that the design is broken in two by their strong contrast. Despite the exigencies of the continuous frieze and its closely packed composition, the battle of gods and giants on the north side (PL. 358) is more successful in its suggestion of movement in space, and the effect must have been assisted by the drawing and painting of details, such as weapons and chariot wheels, on the background of the slab. On the west frieze the goddesses are arriving by chariot for the Judgment of Paris, and the sparser composition, with its hint of the open air, befits the pastoral scene.

The Doric frieze. Whatever the true origin of the Doric entablature, it is clear that while the triglyph represents a structural member, the space between the triglyphs — the metope — is nonstructural. That this space was sometimes left open is proved by paintings of small, perhaps wooden, buildings on 6th-century Athenian vases; and even in a fully developed stone building of the Doric style the metopes usually still preserved their character of panels inserted in slots in the sides of the triglyphs bearing no weight. In a temple at Thermon in Aetolia, of about 620 B.C., where the entablature was of wood, the metopes were flat terra-cotta slabs, with pictures of Corinthian style fired on them in the technique of pottery (PL. 336), and possibly this represents a fairly general early stage; but by the 6th century the tradition of the stone metope in high relief was firmly established, and only high relief can satisfactorily hold its own with the strongly projecting frame of Doric triglyph and cornice.

Since the metopes were separate panels, it would seem natural to select single subjects or a story that could be divided into a number of separate episodes; and this was often done. But it was not invariable. On the Heraion at the mouth of the Sele, for instance, the fight between Herakles and the centaurs ranges over the whole series of metopes on one façade, and on the Sikyonian colonnade at Delphi the three metopes at one end showing the hunt of the Calydonian boar are united in a single composition, ignoring the divisions created by the triglyphs. Still more strange, on one of the long sides two metopes are used in depicting the ship Argo, the center of which, although cut out by the interposition of a triglyph, is thought of as existing behind it. An analogy is provided by the contemporary Athenian "François Vase" (PLS. 348; II, 36), where a chariot procession which runs around it at handle-level is not interrupted but eclipsed by the handles and continues in imagination behind them. Even where the subject belonged to a single metope, the composition sometimes ignored the limitations of its frame and the figures appeared to be moving into or past it. Here the analogies are with the inside of Laconian cups (PL. 338), where the circular frame is apt to cut off parts of the picture in arbitrary fashion.

On the Sikyonian colonnade, where the shape of each metope is oblong rather than square, there is a fondness for animal subjects, which, instead of being, like their Oriental prototypes, merely decorative, are given a mythological context (the Calydonian boar, the bull carrying Europa); but they have a tendency to move out of the frame, as does another of these metopes with a frankly processional subject, a cattle raid by the Dioskouroi and the sons of Aphareus (PL. 343). The orderly Doric spirit infuses its careful rhythm. The raiders, appears held as if on parade, march in step; so do the cattle, three abreast, in quasi-military formation; and in each trio, although the two farther ones look straight ahead, the nearer one turns and gazes at the spectator. The steady beat of this composition has a powerful effect.

A fight between two persons, or between man and monster, remained a favorite theme, for action was dear to the archaic mind; and the exploits of Herakles or Theseus could provide a whole series. The combatants often employed the holds of practiced wrestlers, and these not only made for bold compositions but must have added topical interest. In the late archaic period there were quieter scenes, and in their composition simple verticals were allowed to tell. For example, a metope of the Athenian Treasury at Delphi (which may be as early as 500 but is possibly a decade or so later), where Theseus is received by his patroness Athena, although it uses the archaic idiom of slender proportions and delicate pattern-work, foreshadows the classic style in its spirit.

Other elements of architectural sculpture. The acroteria, which crowned the gable of a temple at its summit and corners, appear at first — especially in buildings with terra-cotta revetments — to have had forms intimately connected with the structure of the building: for instance, the crossing of the raking beams at the apex of the roof. Sometimes they consisted of abstract ornaments or of designs suggested by the growth of plants. But they soon tended to take a sculptural form, that of statues in the round, and can therefore be considered as such. So also can the human figures which were occasionally used in place of columns, or pilasters, as in the Treasury of the Siphnians at Delphi mentioned above (PL. 334). Other elements of figure decoration in architecture occurred only where buildings were sheathed in terra cotta, a system of construction with a prolonged and distinctive development on the fringes of the Greek world, especially in Italy. This subject will be treated below.

FREE SCULPTURE. There is no evidence for the carving in Greece of life-size statues in stone or marble much before the middle of the 7th century. The earliest known, the marble statue dedicated by Nikandre on Delos, seems by comparison with vases and terra cottas to be of about that date, and although the well-developed style implies earlier activities, the develop-

ment may well have taken place in smaller works of art. Indeed, most of the works executed in this style are of small size. The style is now conventionally called "Daedalic," after a sculptor, Daidalos, who is mentioned in ancient literature as having worked in Crete. It may well have originated there: it has strong Egyptian elements that would not be surprising in Crete; and two of the finest specimens, a bronze head in Karlsruhe and the limestone statue in the Louvre known as the "Lady of Auxerre" (PL. 342), were almost certainly made on the island. From Crete the style was adopted by other Dorian states, especially Corinth and Rhodes, and its products must have been known and imitated even more widely, since the Nikandre statue was found in Delos, the religious center of all Ionia, and fragments of a similar statue, equally large, were found in Ionian Samos.

It was believed in antiquity that two pupils of Daidalos, Dipoinos and Skyllis, migrated to the Peloponnesus (about the 50th Olympiad, 580 B.C., according to Pliny) and founded a school of sculptors there, being regarded, according to one account, as "the first eminent sculptors in marble"; and Pausanias, traveling through Greece in the 2d century, saw wooden statues still surviving which they had carved. It is not to be supposed that this was the only sculptural style of 7th-century Greece. Pliny, for instance, names a sculptor, Melas of Chios, as having been active before Dipoinos and Skyllis; and a statue base has survived on Delos, bearing the signatures of his son Mikkiades and his grandson Archermos, which on epigraphic grounds can be dated to the mid-6th century, so that Melas may possibly have been a contemporary of Daidalos.

The impulse to carve marble statues of life size must have come primarily from Egypt, to which the Greeks had direct, if limited, access in the mid-7th century, and it is likely that the technique of carving hard stone was also learned there. Greece possessed what Egypt did not, several fine statuary marbles. The coarse-grained, grayish marble of Naxos and the finer, whiter Parian were the first to be freely used; less so, the brilliant Thasian; Pentelic, hardly at all before the mid-6th century, and during the archaic period only in Attica. If the Greeks learned the art of carving in Egypt, they must also have learned something of the scheme of proportions used by the Egyptians in designing statues, although they may not have mastered everything at their first contact. There is no need to suppose that there were not other opportunities after the first for sculptors to visit Egypt, or that there were not other means of obtaining information from there. Certainly, if the Greeks did use the Egyptian scheme of proportions, they soon modified it to suit their own artistic aims, as they must have modified the technique to suit their local materials.

The statue dedicated by Nikandre is a sculpture in the round only because the block of marble is in three dimensions. The conception is entirely frontal, and no views from the side or back were either originally intended or subsequently devised, the edges of the block being little more than beveled off. We have here, in fact, a clear example of that attitude to statue making which has been shown to be characteristic of many primitive peoples and which even the Greeks were long in discarding. In Greece its persistence may have been encouraged by the quality of the light, which tends to present objects as a series of planes having sharply defined boundary lines; whereas in a misty atmosphere, the form of solids is expressed by gentle gradations of shadow which assist an observer to appreciate their rotundity. The sculptor was working, not from a living model, but from a synthesis of mental images. These images were, however, united and disciplined by a prearranged scheme of measurements, and this factor — the arbitrary arrangement of forms according to a pattern in the mind of the sculptor, with the practical assistance of a scheme of measurements — was potent throughout the archaic period of Greece. There was, it is true, a steady movement toward anatomical correctness; but the successive additions to knowledge that achieved this were filtered through minds intent primarily, not on the correct rendering of natural appearance, but on ordered form, and at least as well acquainted with the works of art by which their contemporaries and associates embodied their ideals as

with the natural phenomena from which they were ultimately drawn. This is clearly demonstrated by the perseverance with which Greek sculptors confined themselves to limited numbers of comparatively simple sculptural types. Their aim being not to reproduce nature but to perpetuate an ideal, the elements from nature which were progressively incorporated were made subject to the main scheme, which changed little or not at all. How much understanding of natural forms a Greek sculptor could acquire and express when realistic presentation was his aim may be seen from such a head as that of the dying man from the east pediment at Aegina (PL. 371).

There is another important factor: the material. This can assist the sculptor by its intrinsic quality or handicap him by undue hardness, undue softness, or unevenness of structure. In this the Greeks, with their hard but not excessively hard marbles, of sufficient translucency and of remarkably consistent structure, were fortunate indeed. The carving of marble is slow and laborious, and the discipline thus imposed on the sculptor — the impossibility of haste — helps him to understand the forms he is creating. One very ancient method especially, that of using abrasive in the shaping of the marble and not merely in the polishing, forced him to apprehend by touch as well as by eye every fraction of the surface of his statue. Yet the archaic Greek was sometimes insensitive to the peculiar qualities of his material, in that similar or even identical forms were produced in different materials, for instance, marble and bronze — another indication that he was imposing his ideals of form on the substance rather than allowing material to dictate them.

The use of color was perhaps partly the cause of this, since it obscures the texture of marble and may even disturb the balance of the modeling, because one color used on one part of a statue may absorb more light than another used elsewhere on it. It might be thought — and has indeed been urged in favor of a revival of the practice of coloring sculpture — that colored sculpture was more realistic. The way in which archaic Greece used color gives the lie to this, for the scheme was primarily decorative, and although there was some relationship to nature, in that, for example, the flesh of men was colored brown and that of women white, nature's color scheme was transmuted and where necessary ignored: hair could be bright red (PL. 351) or blue and the parts of a single garment colored differently if the decorative scheme demanded it (PL. 361).

Kouroi. Although it is only a hypothesis that the Auxerre statue is in the style of the school of Daidalos, and although we are uncertain of the exact relationship to that school of the statue dedicated by Nikandre, we are on firmer ground with the statues of Kleobis (PL. 342, lower right) and Biton, since they are signed by a sculptor, . . . medes (probably Polymedes), who states that he is an Argive. They thus represent a Peloponnesian style of about 600 B.C. which certainly seems to derive from the so-called "Daedalic" and to support the tradition, already cited, of a connection between Crete and the Peloponnesus. The story of the two youths is well known, having been set by Herodotus (I, 31) in the mouth of Solon when he stood before Croesus and discussed the happiness of mortals. They were the sons of a priestess of Hera of Argos, who, when the oxen did not come from the fields in time to draw her wagon, harnessed themselves to it and dragged her about 5 1/2 miles to the sanctuary. The mother prayed the goddess to grant them the greatest gift that she could bestow: the young men lay down to sleep in the precincts and did not wake again. The two statues are exactly alike, and the method by which they were carved is fairly clear. Each was cut from a rectangular block of Naxian marble, on each of the four vertical sides of which the design of one aspect was drawn, probably in a squared diagram. This method would explain some but not all of the peculiarities they exhibit; the remainder arose from the sculptor's attitude of mind.

The statues are of the type that is now called by the general term "kouroi" (youth), although in antiquity such a figure could be used for various purposes: for a god, especially Apollo, the embodiment of youthful, perfectly developed manhood; to commemorate an athletic victory; or as a grave statue. All

such statues have certain features in common: the head looks straight to the front, and the arms hang down at the sides, except for some special reason such as the holding of an object; the left foot is advanced, but the weight is shown as being evenly distributed between the two legs; the hips are level, and a vertical line dropped from the center of the forehead exactly bisects the face and the torso. Within this main scheme — simple and pleasing — which underwent no change for a hundred years or more, it is worth while to analyze the details for a clue to many of the characteristic phenomena of archaic art.

Perhaps the first feature which strikes an observer is the inequality of the modeling: for example, whereas the full recession of the head is shown, the modeling of the diaphragm is exceedingly superficial, being little more than an engraved line. The archaic sculptor did not possess an equal understanding of, or indeed an equal interest in, every part. Moreover, some parts were far easier to render than others and lent themselves more readily to stylization, which, together with a love of turning things to patterns, was never far below the surface of the archaic mind. Some of the pattern formulas became traditional, and then the sculptor did not need to think out the problem again or go back to nature for guidance to a solution; but a part which did not lend itself readily to patterning — for instance, the knee — he might observe more carefully than other, easier parts and thus impart to it a realism they lacked. Indeed, touches of realism were always apt to occur in any part in which the sculptor had for one reason or another become interested, and his discovery, if vital enough and not overlooked, might be added to the common stock of knowledge. But it should be stressed that a second-rate sculptor could carve the statue of a kouros simply by following his master's example, with little reference to his imagination or the living human body. It is not from second-rate sculptors that advances come. The history of Greek sculpture written in antiquity largely consisted, so far as we can judge, of a list of the names of leading sculptors, and this method of writing history, although it may ignore the immense contribution made by the ordinary sculptor to the maintenance of the craft, has some validity.

In addition to an uneven degree of realism, there was often a lack of harmony between various parts in a statue, because the formulas developed for them could not be made to fit into each other. A common example is the hair, where one pattern might have been adopted for the fringe or curls in front, another for the hair at the side, and another for that at the back. Because these formulas were invented independently and the hair was not considered as a single entity, there were awkward transitions or even no organic connection at all between the various parts of it. With these thoughts in mind, we turn to a kouros roughly contemporary with Kleobis and Biton but of another school, the Attic. Of this there has survived only the head (PL. 345) and other comparatively small fragments found near the Dipylon Gate in Athens. We do not know the antecedents of the Attic school or where its sculptors learned their art; they seem, however, to have been less dependent than the Cretans on Egyptian or the Ionians on Anatolian models, and there was more originality and variety in the types, especially of female figures. The body of the Dipylon kouros can in some degree be inferred from the well-preserved kouros in New York (Metropolitan Mus.), which must have been very close to it in its main design but may be a school piece, and also from the colossal kouros from Sounion which seems a little later (PL. 346). In the Dipylon head there is a marked contrast between the solidity and firm precision of modeling in the eye and its surroundings, where the technique of abrasion assisted an understanding of the forms, and the superficial indication of the great sternocleidomastoid muscle, rendered by a single groove beneath the ear. In this we see the deep concern with certain features, especially those which are important in the front view, and a neglect of those which do not form part of the main design and are not seen from the front. The excessive depth of the cheek, for example, arises largely from the clustering of the features on the front face of the block. The reduction of the front of the head to

a satisfactory sculptural design offered many problems to the early sculptor, and he turned with relief to the mane of hair, which could be geometrized into a series of hexagons (though these were carved with deep feeling for their solidity), or to the ear, equally convertible into a pleasing pattern.

If we trace the development of the kouros type down to its end just before 480, we see that there was a steady advance in what may be called realism, in the sense that the proportions of the figures approached more nearly those which may be seen in life, and the head and limbs gave a more convincing impression of articulation with the trunk; the existence of a skeleton within the flesh seems plausible. This advance occurred in all the main artistic centers of the Greek world and, on the assumption that it took place simultaneously everywhere, has been used as a basis for chronological classification. Similar inferences thus seem to have been drawn everywhere, or their results to have become known everywhere, about what existed beneath the surface of the body (inferences, because none of this knowledge was derived from anatomical dissection). There were, however, considerable differences of feeling among the various schools in the way the artistic problem was handled. A broad distinction can be drawn between Ionia and mainland Greece, Ionia being more interested in a soft general appearance and flowing surface, the mainland in linear design and clear demarcation of the parts. This corresponds in a general way to the distinction between eastern and western vase painting. Attica, though not dependent on either, had many of the virtues of both.

The kouros found at Tenea, near Corinth (PL. 350), will serve as an example of mainland, probably Corinthian, work of the mid-6th century, fifty years or so later than the Delphian twins and the Dipylon group of statues, while the "Strangford Apollo," of uncertain provenance, may stand for some mainland school another fifty years later. As contrasted with Kleobis and Biton, the frame of the kouros of Tenea is far lighter, ankles and wrists finer, the head more lightly poised, the posture more alert; and although the thighs are still excessively deep, and the torso in side view is not set organically upon them, because the frontal view is still that with which the sculptor is preoccupied, the scheme of proportions and the general effects are much nearer those of life. The expression is cheerful, and the lips are curved upward in a smile. This so-called "archaic smile" imparts a liveliness to the features that contrasts with the somewhat grim aspect of some of the straight-lipped earlier heads; and this was doubtless its intention. It was caused partly by the necessity, when the full natural depth of the lips was lacking, to curve them either upward or downward in order to give them expression. When the depth of the lips more nearly approached the true depth, and when the relationship of mouth to cheeks was more clearly apprehended, the smile was tempered. Conversely, when the lips were set far too superficially, as in Theseus of the Eretrian pediment (PL. 369), the smile verged on the grotesque.

Attica has recently yielded one of the finest and best preserved of all kouros, remarkably different from the kouros of Tenea though not much later in date. It is the grave statue of a young man named Croesus, who possibly fell in a skirmish at Pallene about 540. While the main structure of the body has not been neglected and remains strong and tense, such care has been lavished on the modeling of every part of the surface that it creates an impression of living flesh.

The Strangford kouros, though the long, flattened curves of its modeling give it an appearance of almost metallic hollowness, does show evidence of prolonged and careful study of the surface forms of the body and of speculation about the internal structure on which they depend. There is a deeper understanding here of the way in which the head and limbs are articulated, though in all these respects it perhaps falls a little short of the figures from the east pediment of Aegina (detail, PL. 371), to the style of which it is fairly closely akin.

Also related in style to the Aeginetan pediments, and perhaps itself Aeginetan, is one of the few surviving bronzes of the period, the boy from Piombino in the Louvre. A silver inscription, in Dorian dialect, inlaid in the left foot, states that it

was dedicated as a tithe to Athena. We do not know who the dedicator was except that he was a man, only the last letter of his name being preserved; we do not know of what the offering formed a tenth, or why a male statue was dedicated to a goddess. It is clearly a young boy, yet the breadth of the chest is immense, as is the depth of the thighs; and there is a lack of harmony between them and the far less massive and flatter abdomen, which terminates below in a narrow triangle. Such inconsistencies were symptomatic of the last phases of the kouros type, when sculptors were struggling, perhaps without realizing it, to embody new ideas in a framework which could not contain them. Eventually one, more enterprising than the rest, discerned that the type would not serve for the presentation of a real posture, broke the convention, and produced a statue in which the logical effects of the stance were expressed in the differing levels of hips, shoulders, and buttocks and in the slant and curve of torso and spine; and the kouros had vanished.

Korai. The naked male figure, the kouros, was one of the favorite types of statue throughout the archaic age of Greece, and except for the occasional addition of an object held in the hand and necessitating the bending of an arm, it hardly varied. Its counterpart, the draped female figure, called for convenience "kore" (maiden), was an equal favorite, but its types were various, perhaps mainly for the simple reason that clothes vary more than bodies.

The "Daedalic" type of female statue has already been discussed in two examples, the statue dedicated by Nikandre and the "Lady of Auxerre." It was quadrate, and of its four facets the front was by far the most important, in fact the only one intended to be seen. There was, however, another type, completely different, whose inspiration came not from Egypt but from somewhere in the East, probably Assyria. The earliest specimen we possess, now in the Louvre (PL. 356), was probably carved in Samos as late as 570 (another, fragmentary, in Samos is of much the same date, and another now in Berlin is a little later); but there must have been earlier prototypes which have not survived. There is, indeed, one Elamite copper statue of 1500 B.C. which they resemble in certain respects.

The statue in the Louvre, of island marble, was dedicated to Hera of Samos by one Cheramyes and may represent the goddess herself, since it is well over life size. Its shape is best described as resembling, though it certainly does not derive from or imitate, a tree trunk, in that it is a tall cylinder flaring out toward the base. The feet are close together and just project from the circle of drapery at the base. The right arm hangs down close to the side, the left is held across the left breast, both causing the minimum of disturbance of the basic design. The dress is elaborate but strongly stylized: it consists of an Ionic chiton and a long cloak which is fastened on the left side at the waist and covers the whole of the back, being held in position by the right hand and evidently drawn up over the head, which is missing. Below the waist the chiton is shown as a series of very narrow, perfectly parallel folds formed by grooves cut with an abrasive; above the waist it is fuller and softer and is diversified not only by a series of folds radiating from the buttons on the right sleeve and running, roughly parallel to each other, obliquely across the chest until they meet at right angles the vertical edge of the himation on the left side, but also by a series of crimpings along its lower edge. In contrast, the himation has a smooth surface and swathes the whole of the back of the figure in such a way that the forms of the body are seen as soft undulations without sharp division, a forecast of that continuity of surface which is one of the distinguishing marks of much Ionian sculpture. The statue dedicated by Cheramyes is worth detailed study because, whatever the reason, the sculptor, although the frontal view is stressed, has contrived to incorporate the sides and back in his composition.

There was also found on Samos a statue similar in general design to that of Cheramyes but with one significant change of motif: one hand grasps a fold of drapery halfway down the

thigh and draws it to the side, thus setting up a complex of oblique folds and breaking the rigidity of the composition. The innovation is important, for it was widely adopted, and its evolution can be traced in the most popular of all archaic female types, not confined to Ionia, in which the figure takes a short step forward with one foot, usually the left, and draws the lower part of the chiton tightly across the legs with the left hand, the upper part meanwhile hanging in fuller vertical folds which are often reinforced by those of a cloak. The interest of this scheme is evident, for it provides contrasts between stretched and loose, vertical and oblique.

The impact of this and of other eastern Greek types can be seen in Attica, which even after the end of the 7th century seems to have been pursuing an independent line of development, as shown by the statue in Berlin, carved about 575, yet apparently uninfluenced by either Ionian or Dorian models. It may be a cult statue from a shrine in the country rather than in Athens: although it has some of the grandeur of form that marks the Dipylon group of kouros, it also has a touch of harshness from which they are free. Not more than twenty-five years later is the kore of Iuvons, so called because it was carried there by some unknown collector, although its lower part remained on the Acropolis at Athens. It is of Attic marble by an Attic sculptor, and although he was no slavish copyist, it is clear that he must have been acquainted with Ionian sculptures. Among the rich series on the Acropolis there are many which follow the favorite Ionian model (some, indeed, are of Ionian workmanship); but there are others, major and minor, which do not conform closely to any type. One, a major work, is the "Peplos Kore" (PL. 351) of about 540, named from the peplos she wears — a heavy woolen square of cloth folded over at the top and pinned on the shoulders, which falls in simple folds to the waist, where it is girt, and again from there to the feet. This Attic dress (sometimes, as here, over a thinner garment) was out of fashion by the last quarter of the 6th century, having been superseded by the Ionic chiton and himation; its form imposed a fairly simple scheme on the sculptor but allowed ample opportunity for subtle modulation, of which this Attic artist took full advantage.

Of the statues of Ionian type found on the Acropolis, one is believed to have been carved by Antenor, because it may fit a base signed by him (PL. II, 41). It is of Attic style, and the sculptor has transformed the Ionian prototype by making it much more massive, simplifying the modeling of both flesh and drapery, and stressing the verticals in the folds both above the waist and below the point where it is held out by the left hand, thus imparting an impressive monumentality to a type which in other hands could become superficial and trivial. Another kind of impressiveness is seen in Torso No. 594, presumably the work of a sculptor from the Cyclades, since it is best paralleled among the series of korai found on Delos. Here the sculptor, although he had a strong sense of pattern, did not allow it to divert him from his main aim, which was to stress the existence of body and drapery as separate entities; and he had an extraordinary capacity for suggesting their solidity and weight. A third is the kore known as "La Delicata," in which a sensitive feminine personality is for the first time suggested not only in the features and expression but by the subtle transmutation of the basic type. Fourth is the kore dedicated by Euthydikos, which must have been carved shortly before the destruction of the Acropolis in 480 (PL. 370). The dress is still the Ionic chiton and cloak worn in the familiar way, but the type has been transformed and shown to be inadequate to the new spirit infusing it. There is no reason to suppose that the sculptor was not Athenian, but it is likely that some of the changes were due to his knowledge of what was being done by sculptors in the Peloponnese. He was concerned to give expression to the structure and mass of the body, and the drapery, though carved with great care and skill, was subordinated to this purpose; there is a deliberate rejection of the touches which could make this type so gaily attractive. Similarly with the features: eyelids and mouth are heavy, and their horizontal lines almost unduly emphasized; they are set in a head which is noteworthy for its solidity and

for the almost geometric oval of the face. Mood and form had changed together: the confident, outward gaze of archaic man had been succeeded by an almost somber introspection.

Other sculptural types. It must not be supposed that the kouros and the kore were the only archaic types of statue. The bearer of offerings was a common subject, but if the offering was small — for instance if a bird or fruit was held in the hand — the modification in the stock types of kouros or kore needed to be only slight. Where the offering was large, an attempt might be made, as with an unfinished statue on Thasos of a man carrying a ram, to modify the kouros to accommodate the animal; there he clasps it closely to his side. Sometimes an entirely new composition was demanded. An outstanding example is the statue by an Attic sculptor of about 575, dedicated by one Ronbos (?) on the Acropolis at Athens (PL. 346). The dedicator carries a calf on his shoulders (hence the name "Moschophoros" by which it is commonly known). The two have been knit into a compact and, from the single view intended, a satisfying composition by the grouping of the heads and by the cross-shaped design of the man's arms and the animal's legs. The head is not a portrait in the modern sense, nor is that of any archaic statue. It is even difficult to decide how many of the statues dedicated on the Acropolis are intended to be individuals; they are certainly not always the dedicators, for statues of korai were sometimes dedicated by men. The archaic sculptor's aim was to present an object that would be pleasing to the god, an ideal embodiment of a human being, a type, not an individual. In no respect, perhaps, is the difference between the archaic and the modern attitude more clearly seen. Even later antiquity was puzzled: Pliny, or the earlier writer whom he was transcribing, tried to explain the rarity of individual portraits among the statues of Olympic victors by supposing that there was a regulation against them unless the athlete had won three times.

Both men and women were sometimes shown seated. There is the long series found flanking the Sacred Way at Branchidae near Miletos where this type was evidently traditional; but in general the Greeks do not seem to have looked with favor on this pose, so often found in Oriental sculpture both in Egypt and Asia Minor, and introduced by way of Ionia into Italy, where it underwent a notable development. The mass of the throne was an encumbrance; unless there was some tampering with the length of the thighs, the plane of the head and torso was too far away from the spectator; and it was difficult to impart any sense of movement, which the archaic artist liked. A much battered statue of about 530, probably that of Athena Polias by Endoios (PL. II, 41) which was seen by Pausanias on the Acropolis at Athens, shows how a masterly sculptor could overcome these difficulties by seating the figure lightly on a lightly built throne, shortening the thighs, bending the arms, inclining the head forward, and drawing one leg back. The recumbent attitude of the ancient banqueter was reproduced in small bronzes and terra cottas (PL. 350), but not in marble sculpture except, rarely, in Ionia (Samos).

There was a purpose for which a running or flying figure was appropriate, besides the adornment of the gable of a building, and that was to commemorate a victory. Victory was regarded as sent by a deity, especially Zeus or Athena, and therefore descended from the sky. The Chiot sculptor Archermos is known to have been among the first to represent Victory with wings, and a winged female figure has been found on Delos near a base signed by Archermos and his father Mikkiades, to which it may possibly belong. The figure (who, like her Oriental prototype, bears three pairs of wings — two pairs on the shoulders and a pair on the heels) is shown as if kneeling, though held just free of the ground by a heavy pendent fold of drapery. All early archaic artists showed the action of running in this way; but the statue on Delos is an extreme example of the process of assembling independent mental images in order to construct a statue: little attempt has been made to reconcile the completely profile legs with the completely frontal torso and head. Fifty years or so later a winged figure of Iris, the messenger of the gods, set up to commemorate the battle of

Marathon, is similarly supported by a downward extension of the drapery, but the legs move in an almost natural position.

The horse enjoyed in antiquity as high a prestige as it does today. Statuettes of horses and horsemen in terra cotta and in bronze had been common from very early times, and as soon as technical skill allowed (somewhat before mid-6th century), large marble statues of the same subjects were carved. Again the Acropolis at Athens is our chief source of information. The so-called "Rampin Horseman" (PL. 353) is an early and splendid example; others came down to the end of the archaic period and had close parallels on Athenian vases, where horses and chariots were much favored (PL. 366).

Finally, there are the wild animals and monsters. The dedication of statues of lions in sanctuaries was unknown at Athens but customary in Ionia. There is a very early archaic series on Delos of uncertain parentage, and others, based on Egyptian prototypes, at Branchidae, while the limestone lioness from the tomb of Menekrates in Kerkyra, about mid-6th century, is one of the most ferocious monsters ever created. Latest of all is that in Berlin, also Ionian, which well exemplifies the uneven development which was apt to occur in archaic work. The composition follows, though not closely and perhaps at second or third hand, some Egyptian model; the mane is stylized into a series of flamelike locks, but the expression of the mouth and the strikingly realistic rendering of the hind legs, with their unstylized individual folds of skin, suggest that the sculptor must have had a living animal in front of him. The great sphinx dedicated by the Naxians at Delphi on a high column is one of those splendid monuments whose meaning is not clear and whose purpose is no longer known. The Naxians had a taste for the colossal: the 33-ft.-high Apollo they erected on Delos, of which fragments still survive (of the kouros type but with arms bent at the elbow and having a bronze belt and bronze locks of hair on the shoulders), was one of the famous statues of antiquity and a stupendous achievement for its period, the very early 6th century.

Etruscan sculpture in marble is extremely rare, no doubt partly because of the difficulty of obtaining the material. Two important small statues (one-third to one-half life size) have been found in Etruria, one in the Polledrara Tomb at Vulci, along with part of a hammered hollow-bronze figure of different style. The material is rather coarse-grained marble, apparently from one of the Greek islands. It must date from the early 6th century (pottery found in the tomb was of about 600 B.C.) and has obvious links with Greek style of the period just after the Daedalic: it may even be a Greek work. The second marble, almost certainly eastern Greek, is the remarkable cult statue from Orvieto, where it was found set up behind an altar in an ancient cemetery. The goddess is naked, and the type, with one hand in front of the body, the other to the breast, is that of an Oriental fertility goddess, here a kind of underworld Aphrodite. The extreme rarity of such a type in Greece itself between the early archaic period, when it is common in terra cottas, and the late 4th century makes it probable that the figure from Orvieto was specially commissioned from a Greek workshop by an Etruscan client.

There are some Etruscan sculptures in local materials, the rough nenfro and the finer tufa, including reliefs carved on panel gravestones and on the sides of funerary cippi. These are not of the kouros type but are lions, sphinxes, centaurs, and the like, inspired primarily by Daedalic and Peloponnesian examples but later increasingly by Eastern prototypes. The work often has vigor and considerable character, the reliefs usually being rather more influenced by Greece than are the sculptures in the round; but in Etruria stone carving never had quite the importance or the quality of work in bronze.

SCULPTURE IN RELIEF. Apart from its use for decorating architecture or other structures such as altars and statue bases, relief sculpture was not common in the archaic age, and few independent reliefs have survived: the great days of the free-standing votive relief did not come until the classic period. There were two exceptions: one was the widely used grave monument in the form of a tall panel carved with the figure

of the dead person in low relief; the other was virtually restricted to Laconia and consisted of a more nearly square panel with figures of the heroized dead and their votaries.

Votive reliefs. There are, however, some reliefs which seem to be simply votive offerings, without funerary significance. The first of four from the Acropolis at Athens represents a potter seated, holding two cups, which from their shape can be dated between 530 and 520; the sculptor's name can be reconstructed tentatively as Endoios. The subject is of interest as showing the importance of the pottery trade in Athens at his time, in that a potter could dedicate a large relief in the most important shrine in Athens, and as leaving no doubt that the figure, the only one on the panel, was intended to represent the dedicator. The second example, though fragmentary and of inferior style, has an equally interesting subject: a majestic Athena stands before a small seated man whose hand touches hers and may be placing something in it; between them stands a table on which lies a round, flat object. No entirely satisfactory explanation has ever been given, the least unlikely being that the goddess is visiting a craftsman. The third example is very close in its arrangement to what much later became almost the standard votive relief: Athena, in Ionic dress, holding out a fold of it as so many of the *korai* do, is being approached by a family of worshipers, shown on a smaller scale, who are bringing her a sow as an offering. The style, which is that of a draftsman rather than a sculptor, is almost a parody of a certain kind of Athenian vase painting at the end of the 6th century. The fourth example shows three women moving forward, probably in a dance, preceded by a man playing the flute and followed by a boy. The subject is unexplained, but the man may be Hermes, the women nymphs, the boy some sacred child such as Erichthonios.

Funerary reliefs. The Laconian hero reliefs are a distinctive class in both subject and style. Their primitive appearance, due to inept carving, belies their date, which can hardly be earlier than mid-6th century. The best-preserved specimen, from Chrysapha near Sparta, shows a man and a woman seated on thrones, or on a single throne, he holding a large wine cup and she a pomegranate; behind the throne is an immense snake, and in front of the seated pair are two diminutive standing figures who carry offerings. The pomegranate probably and the snake certainly imply a connection with the underworld: the two seated figures are the heroized dead rather than deities in their own right.

There remains the large class of tall, narrow monuments consisting of a stone or marble panel, on one face of which is carved a figure, sometimes two figures, in low or very low relief (PL. II, 42); there is often a small relief or painting below the main figure. These are grave reliefs, and they are widely distributed over the Greek world; examples come from northern Greece, the islands of the Aegean, Boeotia, Attica, and elsewhere. With one possible exception, the Esquiline stele (which may be votive rather than funerary), they have not been found in Magna Graecia or Sicily; and even if the Esquiline stele was found there (which is unproved), it might have been imported from the Cyclades. In Etruria, however, sculptured steles — and even funerary urns — are found, mostly inspired by eastern Greek prototypes. Splendid specimens have come from Attica, representing the dead in their customary occupations — e.g., a young man carrying a discus or a javelin, a hoplite in armor carrying a spear. The finest is perhaps that now in New York (a fragment was found earlier and is in Berlin), which shows a young man and a small girl side by side. Almost the whole monument, which dates from about 540, is preserved, including part of the inscribed base into which it was set and the statue of a sphinx which surmounted it (the sphinx seems to have been to the Greeks at first a symbol of death, becoming later an appropriate guardian of the tomb). The effect of the monument as a whole is flat and lacking in solidity, and its proportions are curiously elongated, the total height being 13 ft., 10 $\frac{1}{4}$ in. and the width of the shaft only 19 $\frac{1}{4}$ in. Three of these panel gravestones which come from different parts of

Greece are important in that each reproduces the same basic design — a bearded man leaning on a staff and holding out a cicada to his dog — but each is in a different style, and this raises, without solving, the question of how these designs were transmitted from one center to another. One of them, from Orchomenos in Boeotia, is signed by a sculptor, Alxenor of Naxos (PL. II, 42). In an inscription, he proudly invites the spectator to take a look at his work, which, however, is not of the highest quality.

TERRA COTTAS. Architectural decoration. In the Greek world terra cotta was widely used as a material for sculpture, especially in those districts where stone or marble could not easily be obtained. There are some remains of, and literary evidence for, free sculpture in terra cotta, but most of the surviving fragments happen to have formed the decoration of buildings.

In early buildings, which were often constructed of soft stone, or partly of timber and partly of sun-dried brick, it was essential to protect these inferior materials from the weather; and terra cotta was excellently suited to the purpose, not only for the obvious roof tiles, but also as a sheathing for other parts of the structure.

The practice of using terra cotta probably sprang up independently in Greece, but certainly at some period the Greeks, perhaps especially the Greeks of Asiatic Ionia, became acquainted with the use made of glazed brick and tiles in Assyria, Babylonia, and Persia. In any case, the Greeks soon gave terra-cotta work a distinctive character, and in the Greek mainland the solutions of the various problems involved were so comparatively uniform that it has been suggested that they emanated from a single center, Corinth. There is good evidence, both literary and archaeological, for this connection. Butades, a 7th-century Sikyonian, is reputed to have worked at Corinth and to have invented, among other things, a type of antefix with human heads. Corinthian cornices were famous. Wherever it was invented, the system spread, partly through the actual export of Corinthian architectural terra cottas, partly through Corinthians who executed commissions outside their own territory, partly through local craftsmen who imitated Corinthian terra cottas. The Corinthian tradition is dominant in 6th-century Greece, though Laconians shared the market; and the 6th century was the climax of this system of architectural adornment, for it was gradually displaced, though never entirely superseded, by the stone and marble which were coming to be used more and more.

The terra-cotta casing of the Greek building was not a mere revetment: it consisted of a series of carefully interrelated elements which formed not so much the embellishment of the architecture as the architecture itself, since the terra cotta expressed the essential forms of the moldings and structural members it was designed to cover. Each of these elements had its own scheme of decoration, sometimes molded, sometimes flat, but always adorned with fired colors (FIG. 599). The roof tiles were bounded above by a ridgepole crowned with palmettes, and at their lower ends by triangular or semi-circular antefixes; these offered a field for decoration in relief with a variety of subjects, of which the most common was a frontal head. There were also cornices and other moldings with floral patterns; gutter spouts (sometimes zoomorphic; FIG. 602); and impressive disk acroteria (of which fragments have survived in many places), which were the central feature on top of the pediment and were often of great size (that of the Heraion at Olympia measured over 6 $\frac{1}{2}$ feet in width).

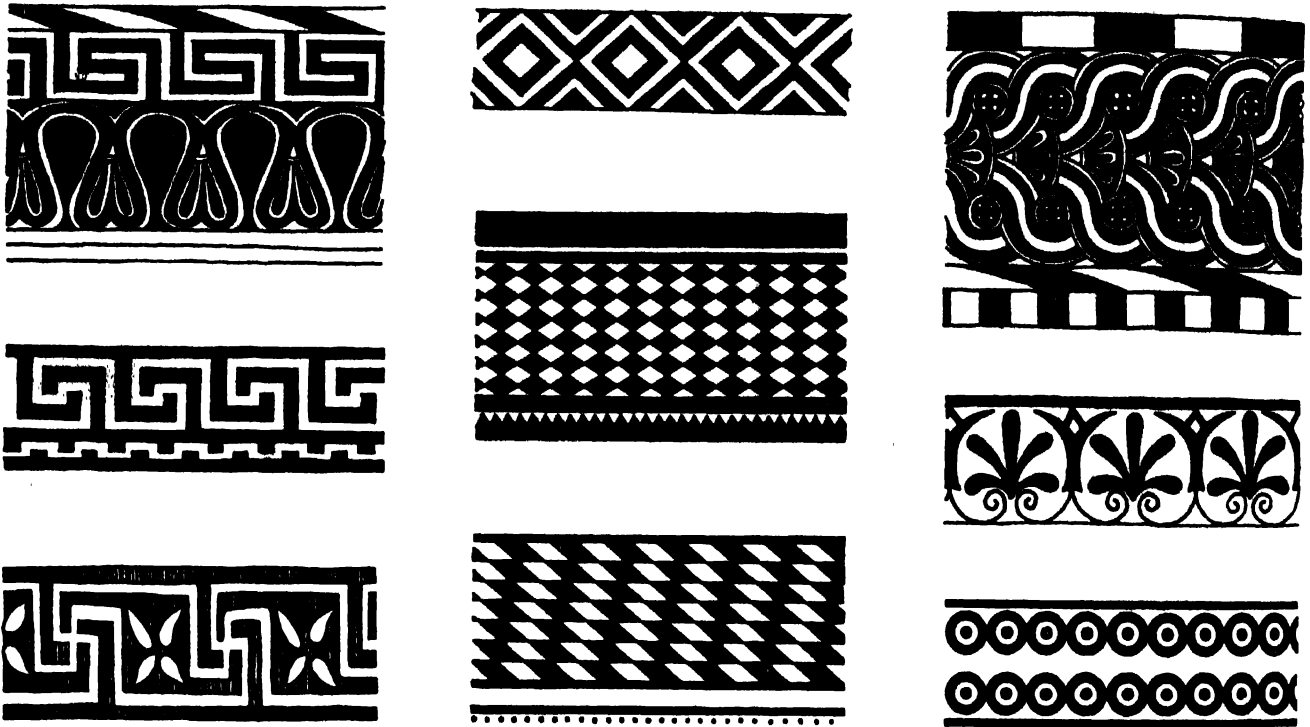
Fragments of the sphinxes which formed lateral acroteria on archaic temples have also survived: one from Kalydon is of the very early 6th century, another from Thebes about half a century later; both seem to be of Corinthian manufacture and of a quality which stands comparison with sculpture in stone or marble. From Taras (Tarentum) two figures of Victory intended for a similar position on some temple may also be mentioned. A large central acroterium consisting of a terra-cotta group, in the round, of Zeus carrying off Ganymede was found at Olympia; though made in the second quarter of the 5th century, it retains much of the archaic spirit. Flat

terra-cotta metopes painted in Corinthian style were found at Thermon in Aetolia (PL. 336), relief metopes in the west, and, especially in northeastern Greece, the terra-cotta frieze in relief.

Not unnaturally, the use of terra-cotta revetments was exceedingly common in the Greek colonies of Sicily and south Italy, where there was no native marble and where some of the stone was of poor quality. Manufacture of architectural terra cottas began early there, and a small building erected at Olympia by the people of Sicilian Gela to commemorate a victory of 582 B.C. is sheathed with terra cottas apparently manufactured at Gela itself, as local finds show. Some twenty or thirty of these western sites have yielded substantial remains — every western Greek city of the period, if it were excavated,

A terra-cotta chariot designed to decorate its roof was made by Veientine sculptors and seems to have displayed magical properties. That it was intended for the roof is interesting, for it has now been established that the splendid life-size terra cottas found at Veii and representing the struggle of Herakles and Apollo for the hind (PL. 359) came not from the pediment but from the ridgepole of a temple.

Much architectural decoration in terra cotta, of the regular Greek system modified to meet the requirements of local architects, has been found in Etruria and Latium. It is often of high quality; its range of subjects, where figures are introduced, is wide; and in addition to the architectural elements common elsewhere, terra-cotta friezes in relief and elaborate acroteria



Archaic decorative motifs on polychrome architectural terra cottas. Above: Treasury of the Geloans at Olympia (from Van Buren, *Greek Fictile Revetments*, 1906). Center and below: Etruscan temple at Veii (from NSC, 1953, p. 29 ff.).

would probably produce some — the richest perhaps being Syracuse, whence comes a splendid altar front in the form of a running Gorgon, in Corinthian style.

The system of decorating buildings in terra cotta spread through non-Greek territories such as Campania, Latium, and Etruria. Etruria, indeed, excelled in both the quantity and the quality of its works in terra cotta. This is the literary tradition, and it is amply borne out by the archaeological evidence. The character of Etruscan architecture, which was largely of wooden construction, also invited this method of protection.

Tradition records the arrival at Tarquinii in Etruria of the Greek Demaratus, a Bacchiad of Corinth expelled thence by Kypselos just before the mid-7th century, who married locally and became the ancestor of the Tarquin kings of Rome. He brought with him three clay modelers, who are said to have taught the art to the local inhabitants. If the story is true — and it is plausible — the Etruscans were apt pupils. In Rome all the early sculptural adornments of architecture were of Etruscan workmanship. Vulca of Veii is a master whose name was preserved by the Roman encyclopedist Varro, from whom Pliny transcribed it, together with the statement that modeling in terra cotta was an Etruscan specialty and that the statue of Jupiter in the main temple on the Capitoline hill was by Vulca. According to Plutarch, this temple had been planned by the son of Demaratus, L. Tarquinius Priscus, and partly built by his grandson, who was, however, driven from Rome before its completion.

have been preserved. It is clear that kilns were often established on the spot for making the terra-cotta revetments of a temple.

The use of terra cotta otherwise than for architectural decoration is well attested by literary sources as well as by objects which have survived. This material was more freely used wherever it was difficult to procure marble or good stone suitable for sculpture; this explains, at least in part, the greater development of terra-cotta sculpture at the margins of the Greek world, for example, in Cyprus and Etruria. In Cyprus there was votive sculpture in local stone and terra cotta inspired by archaic Greek style, mostly Ionic (PL. 372), showing some slight direct Egyptian and Syrian influence. In Etruria, apart from temple decoration, terra cotta was used for representing the dead on funerary urns and sarcophagi. These figures were strongly individualized and sometimes life-size, as, for instance, in the two sarcophagi from Caere preserved in the Louvre and the Villa Giulia, on each of which a man and his wife are shown reclining. Three seated figures modeled by hand, one male (in Rome, Palazzo dei Conservatori) and two female (in London, British Museum), found in a tomb at Caere and dating from the 7th century B.C., show strongly the influence of the Orientalizing style of Asia Minor. But in the archaic period at least, the votive mold-made statuettes so popular in the Greek world were rarely found.

Statuettes. Small terra cottas were the most numerous and the most widely distributed works of Greek plastic art. Many

sites have yielded hundreds of specimens, some even thousands, and their accumulation in sacred precincts was evidently an embarrassment to the authorities, who were obliged periodically to clear them out and bury them or otherwise dispose of them.

The purposes of small terra cottas were various. They could be votive offerings at shrines; they could accompany the dead in the tomb; they could be toys for children; and it is possible that some were personal possessions, acquired perhaps as souvenirs of some visit to a sanctuary and kept because they were pleasing objects rather than because they happened to represent a deity or votary. Some were perhaps *baskania*, those comic trifles which craftsmen concerned with the care of furnaces or kilns set up in order to divert the attention of evil spirits and keep them from meddling. Some terra cottas were containers, probably for perfume; but those not made in the technique of vases, i.e., not fired at a high temperature and not covered with a resistant slip, cannot have been efficient for the purpose, since they must have been porous.

The subjects were usually animals, men, or women. Many of the animals were clearly meant for votive offerings: pigs to Demeter, for instance. Of the men and women, some, from their attributes, can be identified as deities; others are votaries, sometimes shown with their offerings or performing a ritual act, such as carrying water, appropriate at a particular shrine.

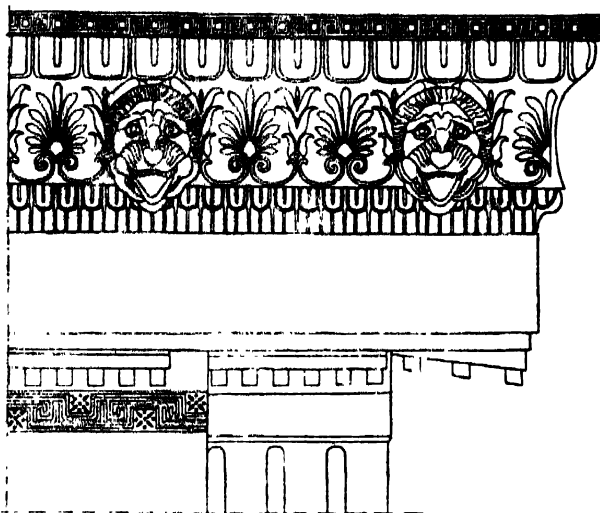
The earliest terra cottas were handmade, and some, mostly early, were thrown on the potter's wheel; but by the 6th century it was common to use a single mold that, when clay was pressed into it, produced a solid figure of no great thickness or, if the clay was carried over the edges, a kind of relief or plaque. By making the sheet of clay thinner and then decking in the back with a separate sheet of clay, a hollow statuette could be and, later in the century, was produced. In the second half of the 7th century perfume vases made of fired clay were manufactured in two main centers, Corinth and, slightly later, Rhodes. Both types were made in the same way as the contemporary vases, i.e., decorated with a slip which became a lustrous black and fired at a high temperature. About the middle of the 6th century these were succeeded by vases and statuettes decorated not with lustrous slip but with mat paint. It has been claimed that these mark the birth of the hollow statuette and that the invention spread from Rhodes throughout the Greek world.

About 500 B.C. the export trade of Rhodes was interrupted, and the result was an outburst of local terra-cotta making almost everywhere, in an effort to fill the gap. Especially prolific were the workshops in Sicily and east Greece, which quickly produced terra cottas of distinctive styles, Taras and Locri Epizephyrii being among the most important centers. Their greatest activity came after the archaic period, and the most characteristic of the products of Locri — the long series of votive plaques, designed primarily for dedication at its famous shrine of Persephone — were most numerous in the second quarter of the 5th century but retained many archaic elements.

The artistic value of terra cottas varied enormously: they were cheap, they were of slight importance, they were produced in large quantities, and when a mold wore out, a new one was often made by taking an impression of a statuette made from it earlier and either firing the new mold exactly so or modifying it by retouching or other means. Thus a single type or a slight variation of it might persist for years, and there might be a vast difference in quality between a terra cotta produced in this way and one made in a really new mold, on the design and finish of which great care had been expended. For this reason the dating of a single terra cotta on grounds of style may be precarious; large deposits in which various types are represented and in which the history of any one type can be followed are obviously more trustworthy in the evidence they provide.

BRONZES. The art of making small bronzes had been continuously practiced since the Geometric period, and its technique had been steadily improved; there was no sharp innovation in bronzeworking as there was in marble with the introduction of large sculpture in the mid-7th century.

The small bronze, which can be cast solid, is comparatively easy to make, the main requisites being a means of heating the crucible to a temperature which will fuse the metal; for the model, a compound of wax which will take fine detail from the tool; and for the "mantle," or mold, a clay of the quality needed to reproduce the detail in negative and to resist great heat when the bronze is poured into the mold after the wax has been melted out. There are naturally numerous points in which this process can be refined to facilitate the work and avoid accidents, but these are the essentials. This technique of bronze-making is by its very nature confined to producing small objects; a large statue cast solid would be too costly.



Decorative scheme of the cornice of Temple D at Selinous (Selinunte)

Large bronze sculpture was not introduced until well into the 6th century; the tradition widely held in the ancient world that two Samians, Rhoikos and Theodoros, were the first to cast bronzes must refer to the art of casting them hollow, probably by the "lost-wax" process or, possibly, by the sandbox method. The immediate corollary of hollow casting was the ability to produce statues of large size in the metal. Before this a limited number of large statues had been made by the *sphyrelaton* (hammering) technique, in which sheets of bronze were shaped by hammering and then assembled to compose the statue, being fastened if necessary to a core of wood or other inexpensive material. At Dreros in Crete, three small statues in this technique have been discovered, one male and two female, in "Daedalic" style; other examples are mentioned by ancient writers. That Egypt was the place where Rhoikos and Theodoros learned the art of casting bronzes is also suggested by the literary evidence.

During the archaic period and probably throughout antiquity large bronze statues were not cast in one piece: head, extremities, and even sections of the body were cast separately and joined to each other by riveting. Evidence of this is provided not only by surviving bronzes but also by pictures on an Athenian cup by the so-called "Foundry Painter" in Berlin, from the end of the archaic period, which shows the assembling and finishing of two bronze statues of over life size.

In the history of sculpture, large bronzes naturally take their place among marble statues, but the tensile strength of the material permitted and encouraged bolder movements than were desirable in marble. The fundamental distinction between marble sculpture, which begins with a block of hard material from which the statue has to be laboriously hewn, and bronze, which begins with a material — wax or clay — that can be modeled with ease into almost any form, seems to have affected Greek artists less than might be expected. This agrees with the attitude of mind already described: Greek sculptors were concerned to express ideal forms and were influenced com-

paratively little by the nature of the material in which they were expressed. However, bronze did allow the sculptor greater freedom of composition: it was durable, and it did not need repainting as marble did. These facts led to its increasing use, especially for statues in the open air, for athletic statues, and for those representing violent action. It had one further advantage for districts where marble was hard to obtain: it could be imported in small units instead of in one unwieldy block, and this caused certain schools to use bronze exclusively. Elsewhere, craftsmen doubtless specialized: the bronzeworker normally worked only bronze, the marble carver normally marble; but great artists, especially those who, like the Athenians, had access to supplies of every kind of sculptural material, did not consider themselves bound to any single medium.

We shall deal here only with small bronzes. Small bronzes reproduced exactly their wax models except that flaws had to be made good, ducts removed, and details occasionally sharpened by chasing. Wax was a material which on this scale could be modeled with little effort and without the physical difficulties of weight and construction involved in setting up the armature for and modeling a large figure; there was therefore greater variety of types and greater freedom of movement than in larger sculpture. Moreover, a small bronze was a less important and less costly undertaking; failure was less serious, and the artist was not afraid to experiment or to render subjects that might have seemed trivial if presented on a grander scale; thus subjects were generally more intimate and closer to daily life (cf. PL. 350).

A large part of the energies of the early archaic craftsman in bronze was devoted to making vessels or adjuncts to vessels. Embossed bowls with Orientalizing motifs were common in the 7th century: the projecting griffin's head on tripod bowls, of which numerous examples, both hammered and cast, have survived, was one of the commonest and earliest forms (PL. 340). Oriental motifs were, however, soon absorbed and Hellenized.

Applied ornaments and figures were for the most part cast; but another kind of decorative metalwork which has survived in quantity is the thin sheet of bronze stamped into matrices or hammered out from front or back in order to produce designs in relief (PLS. 340, 360). These sheets were sometimes shaped for application to particular parts of a larger object, sometimes made in strips which could be cut into appropriate lengths for various uses (a common use was for the arm grip on the inside of a shield). The sheet was normally divided by patterned borders into square panels, each of which could hold one or two figures. Some contained simply a monster such as a sphinx or a Gorgon, but many others had human figures in action, and these were among the earliest representations of certain myths. It is uncertain where this type of strip was made — there may have been more than one center — but it is now generally believed to be Peloponnesian.

Corinth was renowned for work in bronze. It is still an open question whether Corinth or Sparta is responsible for the great bronze bowl found in the tomb of a Gaulish princess at Vix in France, with handles adorned with Gorgon heads, a frieze depicting warriors and chariots, and on the cover an unusually large female statuette (7 1/4 in. high) of fine workmanship (PL. 354). Similar vases, although less magnificent, have been recovered in southern Italy and Illyria.

Deposits of statuettes have been found on various sites, the richest perhaps being Olympia, where the series is continuous from the Geometric period to the end of the archaic period and beyond. It is interesting to note that in the early stages of the art the ease of manipulation of the model material and the absence of strict stylistic conventions seem not to have been particularly helpful to the artist. When the geometric conventions were abandoned, the makers of statuettes, unlike the makers of decorative work, who had Oriental models to guide them, seemed to lack direction, and it was not until after the middle of the 7th century that statuettes of much style and force were produced. These began with the Dorian "Daedalic" style (e.g., the youth from Delphi); but soon the style of the other centers started to emerge, and a statuette in Stockholm looks like an early product of some Ionian school.

During the 6th century and the early 5th, small bronzes were abundant. They could be free-standing figures, to be dedicated as votive offerings in the shrines of deities; but they could also form vase or mirror handles, which were often of a quality equal to that of the independent figures. The range of subjects was wide: deities were rare — Zeus and the half-divine hero Herakles least so — but men in every form of activity appeared: charioteers, athletes, warriors at the alert or in action, banqueters, women both draped and naked; on the near fringe of the unknown world, nymphs and satyrs; at its far confines, Gorgons, sphinxes, and other monsters. Attempts at classifying these numerous bronzes according to the centers which produced them have been made, but with only partial success, and it is often difficult to assign a particular bronze to a particular school, even though the broad limits of its style can be recognized. The subject is sometimes a guide, since some subjects were favored in certain places. Arcadia had its shepherd wrapped in his thick cloak, with broad-brimmed hat, and sometimes carrying an animal; and a Spartan naturally liked to dedicate a statuette of a warrior. A series of mirror handles in the form of naked girls has also been claimed for Sparta. The type may have been borrowed from Egypt, where it was regularly used for toilet implements. Corinth is the rival claimant. In both cities, although for different reasons, prudery was unknown.

That Etruscan bronzeworkers in the 7th century were making the same kind of Oriental contacts as the Greeks is shown by their producing works, especially the fittings for metal vessels, with a strong Oriental flavor. The Polledrara Tomb at Vulci contained, besides the marble statuette mentioned above, the upper part of a large bronze statuette (the complete figure must have been about 20 in. high). Two ancient strips of bronze found in the tomb, of differing styles — one, of convex section, embossed and chased with a frieze of animals, the other struck from matrices, with a procession of chariots — were affixed to the figure by a 19th-century restorer. The technique, that of hammered sheets of metal, is ill suited to figures in the round; the result leaves much to be desired, as do the slightly earlier Greek figures made by the same method, from Dreros in Crete. In form the Polledrara goddess is still tied to Orientalizing models — it slightly resembles the statuette of the same period made of soft stone found at Vetulonia — and can be dated ca. 600 B.C. The large statuettes of warriors, women, and animals from Brolio are more Greek in feeling.

As the 6th century went on, more and more work in bronze was done by Etruscans and some fine reliefs were produced, of which several specimens have survived. The most imposing is the large chariot from Monteleone, now in New York. This is of such strongly Ionian character that an Ionian origin has been suggested; it may have been made by Etruscan pupils of an Ionian master or by direct imitation of imported Ionian works. More Ionian still are the reliefs in Castel San Mariano, near Perugia (PL. 360).

The peak of Etruscan achievement in bronze was reached in the late 6th century, when both Oriental and Greek styles had been digested and truly native styles had emerged in many centers, now identified with increasing certainty. When styles are so various and execution ranges from the exceedingly fine to the coarse and clumsy, it is not easy to define the elements all these bronzes share, which distinguish them so unmistakably from the Greek bronzes they often superficially resemble. The archaic Etruscan did not study the subtleties of the human body with quite the same intensity and sensitivity as his contemporary in Greece; he was content with more summary and less sensitive, though often brilliant, renderings, or stylizations. Like a caricaturist, he was apt to seize a single trait and overstress it in order to obtain an almost grotesque effect: gestures and expressions were vivid but sometimes exaggerated. Etruscan bronzes often lacked reserve, but seldom vigor.

One specialty of Etruscan bronzeworkers deserves special mention, the bronze mirror decorated on the back with engravings or, exceptionally, with low reliefs. This seems to have been an Etruscan invention of the second half of the 6th century, for only the containers of Greek mirrors were

decorated. The great majority of Etruscan mirrors fell outside the archaic period, but those made in the 6th century displayed, like Etruscan wall paintings of the same time, a strong Ionian character. The subjects, Greek deities and scenes from Greek myth, though often careless in execution, were spirited and sometimes charming. Then, again like the wall paintings, they seem to have turned away from Ionia to reflect the great advances in draftsmanship achieved by mainland Greece. Eventually even the products of the distant West, notably Spain, echoed in turn the Orientalizing and Greek phases of archaic art.

COINAGE. Coinage was not a Greek invention, but the Greeks adopted it in its earliest infancy and developed it in such a way that it became the ancestor of modern coinage (PL. 375). The modern custom of placing a human head on one side of a coin is an inheritance from the Greeks, and this practice was becoming common by the end of the archaic period, although the head was always that of a deity. The use of the *exergue* — a small part of the disk cut off by a line below the main field and usually containing some minor device — was also an archaic invention.

Coins — pieces of metal of a standard weight stamped with a device guaranteeing weight and fineness — originated in Asia Minor, and the reexamination of a crucial site there, the shrine of Artemis at Ephesus, has established the date of their adoption by the Greeks from their eastern neighbors, the Lydians, as a little before 600 B.C. Before that, currency consisted of small ingots of precious metal (silver or the natural alloy of gold and silver found in the river beds of Anatolia and known to the Greeks as "electrum") of regular weight bearing no distinctive device. Little ingots of this kind could be cut off a bar or could be made by pouring a fixed quantity of the molten metal onto a rough surface and letting it cool; but this offered no protection against the use of base metal plated with precious metal. The next stage, therefore, was for the ingots to be stamped on one side with a sharp punch or punches which cut into them to show that the interior was pure. A further improvement was to impress the underside with striations, the sharpness or bluntness of which would after a time indicate how much wear the ingot had suffered.

The final stage, the true coin, had a representational device known as a "type" (τύπος, an impression) on one side, at first with a background of the striations; on the other the punch marks continued to be used, usually made into a decorative pattern, until they, too, finally gave way to a representational device. All these stages can be seen in the coinage of Asia Minor, but not all in that of the Greek mainland, to which coinage was introduced later in a developed state. The earliest types may have been personal signets, but cities were quick to take advantage of the new invention and to strike coins with the city emblem on them; the issuing of coinage came, indeed, to be regarded as the clearest proof of independence. The city emblem is often an allusive (or punning) one — the apple of Melos is an obvious example — and this is helpful to the illiterate when the coins are in circulation.

From the moment that it bears a design, the coin has an artistic content, but the first types are not closely related to the shape of the coin, although they may have artistic merit in themselves. When the die cutter considers the relationship of his design to the whole surface — in other words, when he creates a harmony — the coin has a claim to be considered an independent work of art and an art form with its own peculiar problems and merits. The coins themselves show that die engravers had their own ways of handling these problems; though coins were not unaffected by what was going on in other fields and were susceptible to general changes of style, they preserved their own originality: for instance, in the archaic period there is hardly a single direct imitation on a coin of a bronze or marble statue.

From the artistic point of view the evolution of the design was bound up with the evolving shape of the piece of metal on which it was impressed. This began as bean-shaped or oval and gradually became more rounded, until it finally developed into a thick disk; but Greek coins were never struck, as is the modern coin, within a collar, to prevent the metal

from spreading under the impact of the die, and they were therefore never perfectly circular. There were, however, in almost all the Greek cities of Italy, coins of a different shape which lasted through roughly the whole archaic period, although they did not survive it, and which more nearly approached the flat, circular shape of the modern coin. These coins bore a device in relief on one side, and on the other usually the same but sometimes a different device incused, i.e., sunk in. This invention may have had some connection with the doctrines of Pythagoras, and its use among these cities certainly implies some kind of confederation — religious, political, or perhaps simply commercial. The technical difficulties of striking coins of this form with different devices on front and back may have been among the reasons for their abandonment.

Archaic Greek coins never referred to contemporary events directly and seldom indirectly. Their language was symbolic; it would be impossible to infer from them, except in the most general way, the history of the city which issued them. A victorious chariot stood for a victory in war, a lion beneath it for the conquered foe. Dolphins round the head of the fountain nymph Arethusa symbolized the fresh spring which rises in the sea at Syracuse; the famous sickle-shaped harbor at Zancle, from which the city took its name, was shown schematically, enclosing a dolphin — though, surprisingly, on some coins the harbor appeared in a detailed plan which even showed the buildings on the quays.

The first known inscription on a coin is a sentence on a coin of an unknown city in Ionia in the late 7th century: "I am the signet of Phanes." Thereafter only the initial letters of the city's name or the genitive plural of the ethnic name appeared. The lettering was usually arranged with care even if not in organic relation to the device. At the end of the period the lettering, like that of the contemporary figured vases, played a not unimportant part in the decorative scheme.

Coinage being primarily utilitarian, artistic quality was often subject to commercial necessity. When the demand for coinage was heavy, old dies were recut and new dies commissioned from all the die engravers available, good or bad. It is a matter for regret that toward the end of the archaic period Athens stereotyped its coinage and for many years issued coins bearing identical types, in archaistic style; as a result the good die engravers must either have gone elsewhere or have devoted their talent to other forms of art. Most coinages in mainland Greece were somewhat conservative, but in Sicily and Magna Graecia things were different. There coinage was more varied, artistic quality was valued, and technical skill was of the highest. In these regions the beginnings of a taste for fine coinage can be discerned at the end of the archaic period, although the climax was not reached until later.

GEMS. The craft of gem engraving — the carving of hard stones in order to produce intaglios which would be decorative in themselves, which might be considered to possess magical qualities, and which would stamp an impression in wax or clay — had been brought to perfection in Mycenaean times. In the Geometric period of Greece it was almost forgotten, and instead of using hard stones and cutting them with the wheel, the few Geometric-period gem engravers carved only softer stones, by hand.

In the 7th century the Oriental influence was manifest, in gem engraving as in all the other arts. Egyptian scarabs also (mostly of a glazed compound, but some of stone) were freely imported, and in places such as Cyprus or Sardinia, where Greeks or half-Greeks were in constant contact with Phoenicians, a mixed style arose when engravers, presumably Greek, imitated Phoenician work, often on cylinder-shaped stones, which were the commonest Eastern form. In the Aegæan an important school of gem engravers was centered at this time in Melos, using for the most part soft stones such as steatite cut into shapes that derive from the Mycenaean, but carving them in a vigorous and distinctive style that embodied Mycenaean and geometric elements. The subjects were chiefly animals and monsters — marine monsters were a specialty — but occasionally human figures appeared and, very rarely, mytho-

logical scenes: for instance, a remarkable stone in New York engraved with the death of Ajax. The style died out just after the end of the century.

With the 6th century the craft of engraving hard stones was once again mastered, and during its course gems became increasingly common. The stones most often used were the various forms of chalcedony: the beautiful, pale gray-blue variety, and, most frequent, the reddish-brown sard, with its paler relation the carnelian; agate (onyx) and, more rarely, rock crystal. The commonest shape was the scarab, the beetle sacred in Egypt to the sun god; this was widely used from very early times by the Egyptians for seals or talismans, being carved in various materials and engraved on the underside with hieroglyphs — the names of Egyptian kings, mottoes, or often debased and meaningless symbols. These were also produced in enormous quantities in glazed paste and were exported to all the shores of the Mediterranean. The Greeks liked the form and imitated it, although they did not give the anatomy of the beetle quite the same care as did the Etruscans. They also used a similar but possibly unconnected form, not zoomorphic, which is now called "scaraboid." These are the two shapes most often found, but the cone, the cylinder — both old Oriental shapes — the barrel, and others also occur. A favorite way of mounting the gem was in a thick silver or gold hoop which served as handle when the impression was being made; later they were set in finger rings. The bezels of gold and silver rings were engraved in a manner similar to gems.

Our knowledge of the various gem engravers is fragmentary, but there was evidently a center in Samos: Theodoros engraved the famous ring of Polykrates (mid-6th century), and the philosopher Pythagoras was the son of a gem engraver, Mnesarchos, of about the same date. The tools and the raw material were light and easily transported, the engravers probably few and a closely knit guild; it is natural, therefore, that they have left only slight traces. When they began to sign their gems, we come to know one or two more names, as, for instance, those of Epimenes, apparently a native of one of the Cyclades, and Syries, possibly from Euboea; among other unsigned stones we can recognize distinctive styles without being able to assign them to artists or localities.

The gem, like the coin die, offered the artist a shape of some difficulty; but the gem cutter, unlike the die engraver, was not restricted to a circular field. The scarab and the scaraboid provided for the engraving a somewhat broad oval field which the gem engraver, again unlike the die engraver (except in 6th-century southern Italy), usually enclosed in a decorative border. When the oval field was upright, it could be satisfactorily filled by a single figure, which was often composed into a design of subtle complexity; but when the oval was set lengthwise, unless a recumbent figure was used the space seemed to demand a second figure, man or animal; and the overlapping or interlacing of the two tempted the engraver to experiment with the rendering of the third dimension, not only in foreshortenings but in carving less deeply objects that were farther off. There was nothing quite like this in contemporary relief sculpture or even in Athenian vase paintings. Doubtless there were parallels in panel paintings which have not come down to us, but there is no reason to suppose that the gem engravers were dependent on any of the other arts. Indeed, the exigencies of the shape and the intensity with which the design had to be studied in order to fill it satisfactorily, the minute scale, the hardness of the material and the necessity for carving it in such a way that the stone would readily come away from the impression gave to gem engraving special characteristics; and although the style and composition sometimes resembled those of coins, the correspondence is not so close as to make one suppose that die engravers and gem engravers were commonly the same people. Moreover, in Sicily and south Italy, where the art of die engraving achieved the highest excellence, few gems have been found. In Etruria the reverse is true: coin designs were negligible, but there was an immense output of gems, many of high quality, their style sometimes very near the Greek yet, like most Etruscan products, possessing a vivid character of their own.

JEWELRY. The accidents of preservation give a misleading picture of ancient goldwork, as of ancient textiles. Textiles decay, and this has caused their almost total loss; gold does not decay, but works executed in it can be crushed or converted to other uses more easily than those in any other material. In emergency they can be melted down for coinage, and this one fact is largely responsible for the dearth of gold objects in the collections of today. Furthermore, a sentimental regard for the past was not an integral part of the ancient Greek character: when an archaic piece was worn or battered, it would, unless it was among objects dedicated in a shrine, be broken up or melted down and reused; and even dedicated objects were not wholly immune. Thus the archaic pieces, having been in longer use, suffered more than those made later.

There is one further special reason for the scarcity of archaic work: the Persian Wars. The Greek cities of the Ionian coast must have spent or been despoiled of much of their treasure during the Ionian revolt, and in the subsequent invasions of Greece itself the gold collected in shrines or owned privately must have been looted, dispersed, lost, or converted.

That goldwork was abundant in the archaic age can hardly be doubted. The women represented in sculpture and terra cotta and on coins and vases almost invariably wear jewelry; it was not necessarily of gold, since electrum and silver were also used, and time has probably destroyed less gold than silver; but where there are untouched burials of well-to-do people (tombs, in the whole archaic world, are our main source of knowledge), these are found to be reasonably rich in gold, even though not all a woman's finery was always buried with her (grave goods made of gold foil were sometimes substituted for the more solid objects).

What first impresses a modern observer about archaic goldwork is the almost complete absence of precious or semiprecious stones: effects were obtained not by insetting these and rarely by the use of glass, coral, or amber inlay (true enamel seems to have begun about 500 B.C.) but by the embossing of the gold itself or by the attaching of grains or wires of gold to the main piece. The method of attachment, or "granulation" as it is called, was a process of which the secret had been completely lost until 1933, when it was proved to be a chemical process based on the change of a copper salt into metal at a certain temperature, and not a mechanical one in which the grains were soldered on by hand (which would in any case have been manifestly impossible in many specimens, in which the grains are hardly coarser than sand).

The commonest kinds of jewelry were earrings, necklaces, bracelets, and pins. Earrings took many forms: a disk which fitted close to the lobe of the ear was common, but there were also pendants. One of the most pleasing archaic types was the thick rod bent into a serpentine form and finished at the ends with a pyramid of gold granules. Necklaces were usually composed of a series of separate units which could be globular, polyhedral, or of more elaborate shapes, ribbed, fluted, or granulated. Often they were large, flat plates on which designs were stamped, embossed, or granulated. Bracelets could be of plaited wire or composed of a thick rod bent into a circle; this was usually interrupted at one point, and each end decorated with the head of an animal. Pins had heads of an immense variety of forms, some highly elaborate.

Since archaic goldwork often consisted of embossed or granulated designs incorporating animal or human figures, stylistic and chronological classification is not impossible, but caution is necessary, for a craft of this kind is apt to be conservative and patterns may persist for generations. It is clear that in the 7th century there were not only Assyrian and Egyptian elements in Greek jewelry but some Lydian influence on the style, which is not surprising in view of the proximity of the Ionian Greeks to the Lydians in Asia Minor, the well-known fondness of the Lydians for gold, and their teaching the Greeks the art of coinage.

The best-authenticated finds of archaic jewelry are from excavations at Ephesus and Kameiros in Rhodes; sporadic finds have been made in the islands, notably Melos. At both Ephesus and Kameiros a frequent subject on the little embossed relief

plaques used to form necklaces is the mistress of the beasts. A favorite in all archaic Greek art, she was specifically the goddess worshipped at Ephesus under the name of Artemis, in reality identical with the Anatolian Cybele. To her worship belong also the plaques decorated with human-headed bees: bees held an important place in the myth and cult of the Ephesian goddess. Many of the relief plaques from Kameiros are of "Daedalic" style, and there is no reason to doubt that these are contemporary with the "Daedalic" sculpture of the second half of the 7th century, discussed earlier. There is a slight corroboration of this in the finding, with some of the relief plaques, of a scarab of Psammetichus I of Egypt, who reigned from 666 to 612 B.C.

Italic and Etruscan jewelry, often of unsurpassed quality, had obvious links with Syria and Anatolia (PL. 375). Filigree and granulation abounded, showing the highest technical skill; sometimes human figures were represented, in an Ionian style. Splendid safety pins of various types have survived, some surmounted by a large company of animals in the round, formed of sheet gold and decorated with lines of granules. Granulation is often extremely fine and is set in patterns or sprinkled over the whole surface, giving it an appearance of having been dusted with gold.

CARVINGS IN IVORY, BONE, AMBER, AND WOOD. The art of carving ivory was one which stood somewhat apart from the other arts of the ancient world. Ivory was in archaic times a rare material of uncertain, even mysterious origin: its color, strangely like that of flesh; its heaviness and dense structure, yet comparative ease of working; its surface, hard yet not cold, extremely delicate to the touch and capable of receiving the smoothest finish on the smallest scale — all these made it most highly prized. The small size of the pieces in which the raw material was necessarily obtained and their shape not only dictated the size of the works of art made from it but even suggested their design. This was an art in which, unlike that of the bronzeworker, nothing could be added, and unlike that of the marbleworker, little could be spared. Everything contributed to produce work of exquisite quality. The most common use of ivory was for statuettes, small reliefs, and seals, but it was also used for inlaying and could be pieced together to make objects larger than the dimensions of a single tusk would permit.

The art, like much of the material, is certainly Eastern in origin. It had been known to Mycenaean Greece, and it became known again to the Greek world of the 9th and 8th centuries B.C. It has been suggested that there were at least three western Asiatic centers of ivory carving, one in Anatolia, one in Phoenicia (perhaps at Tyre) and the third somewhere in north Syria; and that their styles, reaching Greece by various routes, all exerted an influence on Greek art. Certainly even in the Geometric period there was Greek work of the finest quality in ivory; and it has been plausibly suggested that the Greeks learned the craft from foreign craftsmen settled on Greek soil.

The combination of ivory with gold must also have been an Eastern idea. The Greeks adopted it with enthusiasm, and its popularity in archaic times can be gauged by the fact that when, in the 2d century of the Christian era, Pausanias visited the Temple of Hera at Olympia — then evidently being used as a museum — he saw in it, besides the famous Corinthian chest of Kypselos, made of cedarwood inlaid with ivory and gold, at least a dozen gold and ivory statues, mostly made by Peloponnesian artists of the 7th and 6th centuries B.C. Since several of these were groups, they were probably of fairly small size; it was left to classic sculptors to produce colossal figures in this technique, but fragments of three life-size figures were found in the deposit at Delphi mentioned below, together with a wealth of gold relief work and ornaments which had formed part of their garments, hair, and jewelry.

Several sites have yielded works in ivory. The longest series (some two hundred pieces) comes from the shrine of Artemis Orthia in Sparta and comprises some imported works and many locally made, covering the whole of the archaic period. (The supply of ivory was apparently cut off about 600 B.C., and after that bone was used instead.) The more important objects

consist of combs, each usually with a relief on the rounded projection at the top by which it was held; plaques for fastening to the tops of safety pins; plaques of unknown purpose; seals; and some independent figures, mostly of animals. There are many mythological subjects. The most imposing piece, a semi-circular plaque 9 in. long and originally inlaid round the edge with amber studs, bears an unidentified scene of a warship arriving or departing and a hero at the stern greeting a woman. This and other ivories found in Greece have analogies among sculptures at Karatepe in northeast Cilicia, where a mixture of Anatolian, Phoenician, and north Syrian elements can be detected; and it is thought that this center played a part, through intermediaries, in the formation of the Orientalizing style in Greece and Etruria. Handsome round ivory seals were among the finds in the shrine of Artemis Orthia, and similar seals in greater numbers were found in the Heraion at Argos and in the Corinthian Sanctuary of Hera at Perachora. Samos yielded several fragments of reliefs, including one evidently imported from a non-Greek source; while from the Temple of Artemis at Ephesus comes a series of statuettes of animals and human beings, some in Lydian style, others in Greek. Of the human beings, two of the finest, probably Lydian, represent a priestess spinning and a eunuch priest — probably of the cult of Ephesian Artemis — handling his beads. A third shows a young Greek priestess, of pure Ionian style, who carries a jug in her right hand and a libation bowl in her left; on her head is a tall pole, on top of which is perched a hawk, a bird who held a special place in the cult of the Ephesian goddess.

Nothing is known of the origin of one of the most remarkable of surviving Greek ivories (PL. 341), although the style seems Dorian: a group of two women, 5 $\frac{1}{8}$ in. high, of the second half of the 7th century B.C. It was attached to a background, perhaps a wooden chest, and is complete and unbroken on each side, though there may have been separate figures or groups fastened near it. The motif is without parallel at this period: the woman on the left has one breast bare and both hands on her girdle as if to tie or untie it; the other has long hair falling on her shoulders and holds her left hand between her breasts and her right hand, with the edge of her cloak in it, on her right shoulder. The cloak, however, has fallen, to reveal the front of her body to below the knees. Various interpretations have been offered: two goddesses of the soil; Aphrodite and Peitho; Aphrodite and Helen, who would be displaying her beauty to Menelaos, a subject common on Athenian vases a century or more later, though not so frankly treated; or possibly part of a Judgment of Paris.

At Delphi a deposit of ivories was discovered in 1939 consisting of a great many fragments of statues and reliefs in various styles which had evidently been collected together in antiquity after being damaged by fire and had been buried. The most imposing of these is a figure of Apollo holding a lion, carved in a style which has been claimed both for Ionia and for Dorian Rhodes, where ivories have also been excavated. When the less well preserved of these remains have been further studied and the shattered pieces reassembled, much more information about ancient ivory working should be gained.

In the 6th century and later, bone carvings became widespread. Work in wood must also have been extensively practiced, but owing to the perishable nature of this material, little has survived. Of carvings in amber, necessarily limited to ornamental objects of small size such as necklace pendants, important examples of the archaic period have been preserved, especially from the Adriatic coast of Italy.

PAINTING. To gain any certain knowledge, however meager, about archaic Greek painting on panels or walls is exceedingly difficult, since only the scantiest remains exist (PL. 352), and the statements of ancient authors are either imprecise or else too precise in that they are oversimplified and thus often unintelligible. Two sources supply indirect information: archaic Greek paintings on vases and contemporary Etruscan paintings on walls. But the evidence of both must be treated with caution: ways of handling a subject as well as techniques are peculiar to vase painting, which, especially in regard to color

and shape of field, is more limited than free painting need be; while the exact relationship of the Etruscan paintings to vanished Greek paintings executed a thousand miles away is largely guesswork. Nor do we know how many panel paintings and wall paintings there were in archaic Greece or how important they were artistically in comparison with the vases. It is likely that panel paintings on clay or wood were fairly numerous, though vastly fewer than the vases, and varied widely in achievement, and that wall paintings were both rare and important.

Some broad inferences can, however, be drawn. Most ancient writers give Corinth the credit for early advances in the art, and the archaeological remains tend to confirm this, since the vases known as proto-Corinthian, produced about the third quarter of the 7th century, seem to be derived from paintings of high quality in another medium. Despite the limited palette imposed by the necessity of firing the colors, these vase pictures were designed in polychrome — not, like other vases, designed in monochrome and given touches of color to enliven them. Further, the general scheme of composition and the arrangement of the individual figures in relation to one another show an attempt to suggest that the scene is set in three dimensions and is not merely a two-dimensional frieze. These conclusions are confirmed by the rather later but also Corinthian painted clay metopes from Kalydon and Thermon (PL. 336), again in the technique of pottery, with fired colors; these are a more reliable guide to monumental painting than any of the vases except the proto-Corinthian polychrome groups. The series of flat clay plaques from a site near Acrocorinthus, although fired, occasionally seem to reflect the art of panel or wall painting, especially where they prefer outline to silhouette. This kind of outline drawing, however, is not fundamentally different from silhouette, in that the inner details of the figures are rendered with single lines and not with hatching, shading, or brush strokes, and the colors are in areas of even tone, serving to define boundaries and not to model anything within them. They are, in short, still colored drawings.

Two examples of another kind of Corinthian painting have survived, the wooden wax-coated votive tablets from Pitsa; but although of great technical interest and charm, they do not display any essential difference of approach to the art of painting. Similarly the Athenian clay plaques of the 6th century — mostly either votive or part of the architectural adornment of small tombs — do not differ fundamentally from other work by the vase painters who produced them, although they are often of very high quality and not restricted in the shape of the field as vases are (PL. 348).

On a different footing, and later, are the gravestones, of which several fragmentary examples have also survived, where the figure was painted on a flat marble slab. Although the colors have almost gone, the painter's general method and aims can be judged. The gravestone of Lyseas, for example, of about 510 B.C., shows a single draped figure in profile; his two garments were in different colors, his flesh in a third, and the background in a fourth. Yet it is in effect still a silhouette and shows an approach little different from that of the vase painters; the detail is all linear, but there is a feeling for the three-dimensional character of the ends of the folds of drapery, and an attempt has been made to suggest depth, though not to draw it, by showing the hand holding up some ears of wheat on the far side of the body. It is hardly fair to judge the work of leading painters by such scanty relics, which may or may not represent the highest achievement of the time.

During the 6th century certain innovations appeared on vases which would seem not to have been invented by vase painters but to have been borrowed from a major art. There was, for instance, a complicated grouping of the team of a four-horse chariot, seen in three-quarter view, which occurred more than once on vases. In this, without real foreshortening, an attempt was made by means of a carefully planned silhouette and an elaborate design within it to suggest the relative positions of the horses and to distinguish them from one another despite overlapping. Analogous is the group of cattle on a Chalcidian vase cited below. Other vases seem to reflect, though one cannot say how accurately, lost wall or panel paintings. A well-known

example is the group of Achilles and Ajax playing a board game during the Trojan War, of which we possess a number of versions on vases (the finest surviving is that by Exekias in the Vatican) that are substantially the same in design and must have a common original — possibly a vase painting but more likely not.

One Kimon of Kleonai, of uncertain date, is recorded as having invented *katagrapha*, which Pliny translates "oblique imagines" and which must surely mean foreshortening. The remark by itself tells us little, but if Kimon was active in the last quarter of the 6th century, it is possible that he was indirectly responsible for the growing interest in the third dimension which is evident among the Athenian painters of red-figured vases at that time. This interest was confined to foreshortening within the individual figures or in the overlapping of one figure on another; there was no attempt at a general system of perspective and no indication that the possibility of such a system was recognized. All archaic painting, if the vases are a fair criterion, arranged its figures in the fashion of a frieze, with a single ground line, and never attempted even the bird's-eye view used in Assyrian and Egyptian reliefs from very early times. A faint gleam of something else appeared in Exekias' cup showing Dionysos sailing among the dolphins, and once or twice elsewhere; but it soon faded away.

The subjects of the lost paintings can confidently be assumed to have been predominantly human beings; there was not the same inducement as there was for the vase painter or even the architectural sculptor to retain the animal motifs originally borrowed from the East. But horses, we can be sure, often appeared. There may not have been quite the same insistence on the stylization of landscape elements as in vase painting, where the silhouette technique imposes it, but it can be guessed that in mainland Greece these landscape elements were introduced only where the story demanded it and that then they were kept to a minimum; in eastern Greece, if one can trust slight clues from the vases, there was more interest in animals, trees, and flowers.

Etruscan paintings, although interesting because of their inferred relationship to Greek paintings which have vanished, are of even greater interest in themselves. They had their origin in local sepulchral rites and, apart from the terra-cotta plaques mentioned below and some minor objects such as a small urn in Tarquinia (Tarquinii), consist entirely of the fresco decoration of the underground-chamber tombs. Four fairly distinct phases can be detected in the archaic period. The first, of the late 7th and early 6th century B.C., is Orientalizing and is best illustrated by the Campana Tomb at Veii. Fantastic animals and some human beings are in procession, and spaces left vacant by them are filled with ornaments, just as on the Greek vases of Orientalizing style which were being imported into Etruria at the time. The drawing and proportions are clumsy, as if the painter had not fully understood or digested the style on which he was modeling his own. As the 6th century progressed, there were signs of the emergence of what may be called an indigenous style, although some influence from eastern Greece is apparent: for example, some of the figures recall those on "Pontic" vases, which seem to have been made by Etruscans under Ionian influence, perhaps taught by Ionians who had immigrated. Two sets of terra-cotta plaques from Caere, of about mid-century (one in the British Museum, another, rather later, in the Louvre), are good specimens of this. They were used for lining tombs and are painted in fired colors, some on buff, some on white slip, the figures being outlined in black; within the outlines areas are painted black, reddish brown, or white. The scenes are concerned with the underworld, although the exact meaning is not clear.

Caere seems to have been a notable center and even in the time of Pliny the Elder (1st century) was famous for the paintings that had survived there. Today the most numerous and best preserved are at Tarquinia, where a number of tombs illustrate many styles and periods. In the third quarter of the 6th century came the third phase, that of strong Ionian influence. In the Tomb of the Bulls, about 530, the main scene is Achilles lying in ambush behind the fountain house for Troilus; the theme, borrowed from Greek legend, has been

given an allegorical meaning—the ambush of Death. The style owes much to Ionia; exactly how much in detail cannot easily be judged.

The Tomb of the Augurs, a few years later, is named from two functionaries who stand in attitudes of grief one on each side of the door. The scenes on the other walls are of exceptional interest, for they are of games, presumably funeral games, of a peculiar kind. Two men are wrestling, with prizes in the background, quite in normal fashion; but the barbarous sport which is being practiced near them may be an ancestor of those which later were to become the gladiatorial shows of Rome: a man with a club, and a hood which blinds him, is bleeding from the bites of a dog which is attacking him savagely. He is also entangled in a long cord held by a sinister, masked figure in a dappled tunic and pointed hat, whose attribute—*phersu*, or mask (from which the Latin *persona* is derived)—is inscribed beside him.

The still later Tomb of the Lionesses is also strongly Ionian in style but infused with a local spirit and unrivaled for the ferocious vigor of the funeral dance and the vivacity of the banquet scene (PL. 363). More important in what it portends for the painting of the future is the Tomb of Hunting and Fishing, where men are fishing from a boat and slinging at birds; this may be called the oldest European landscape painting. The whole scheme, the scale of the figures, and their relationship to their surroundings are different from anything we know in Greek art. The figures and birds are outlined in black, but the landscape features—waves and rivers—are deliberately left more hazy in outline; the colors, too, are numerous and are blended to produce still more—yellow, blue, green, black, red, brownish red (with the garment of intermediate tones), and white. This wide range was made possible by the greater freedom of fresco, where the colors do not have to withstand firing. Late in this period is the Tomb of the Baron (end of the 6th century). The painting here represents the members of a family standing between two horses; it is harmoniously composed and painted in lively colors (PL. 364).

The last period of archaic Etruscan painting, at the beginning of the 5th century, was distinguished by an increase of Attic influence and by attempts—as in Attic vase painting—to render perspective. This is seen in the Tarquinian tombs—those of the Chariots (PL. 368), of the Triclinium (PL. 374), and of the Funeral Couch—and in other contemporary and later tombs at Tarquinia itself as well as at Chiusi. Although some of these were painted after the archaic period, they do not diverge basically from the conventions of archaic art.

POTTERY AND VASE PAINTING. The history of archaic pottery and vase painting differs from that of sculpture in that its development is continuous from proto-Geometric times—it even has a technical link, in its use of a lustrous black slip, with the Mycenaean period—whereas, apart from the Cycladic figures of the 3d millennium, there was no Greek sculpture in marble before the mid-7th century.

The pottery of the Geometric period had been decorated with patterns in black which covered the whole surface of the vase as if with a network. When animal or human figures at length appeared, they were small in scale and reduced to geometric formulas, and they took their place among the other decorative elements (see GEOMETRIC STYLE). After the first Eastern contact these embryonic forms developed significantly; at first and for a long period animal figures predominated, but later, at the beginning of the 6th century, human subjects dominated the scene. Greek potters imitated not Eastern pottery but Eastern metalwork; and many of the features that appear on Greek vases are best explained by prototypes in embossed and inlaid metal. A few such Oriental metal vessels have survived, not all of high quality; thousands of them, of varying excellence, imported into Greece and Italy, must have impressed the local people. From prototypes in metal came the enrichment of the earlier Greek vases, developed with a baroque exuberance, especially in the monochrome impasto and *bucchero* wares of Etruria. These recall the gray pottery of western Anatolia and of Lesbos, the latter derived from metalwork.

Nor must the influence of textile patterns be underestimated. Because of their perishable nature, the vast quantities of textiles used in the ancient world have vanished; yet they must have comprised a great repertory of patterns appropriate to weaving and embroidery and derived from many sources.

In vase painting the subject most obviously borrowed from the East was the lion. Other subjects included the panther and such monsters as the griffin, sphinx, and siren; these, with the boar, bull, wild goat, deer, and a variety of birds formed the stock in trade of the ordinary vase painter during the 7th century. The animals were displayed in continuous bands around the vases, one band above another; and even on those vases that utilized human figures and mythological scenes, these friezes of animals persisted, occupying a subsidiary position above or below the main scene and sometimes intruding into it, until well into the 6th century. Patterns, too, were borrowed and transmuted and tended to transform the decorative scheme from rectilinear to curvilinear. Geometric figures had been in silhouette, although in the later stages of the style a space was "reserved" in the silhouette of the head to accommodate the eye. Soon the features grew; the black receded and served only to indicate the hair and clothing. Thus an outline style emerged, with inner details drawn in the black slip. The picture was further enlivened by touches of other colors: white (used especially for the flesh of women), purple, and dark red. There was also a change in the character of the drawing. Geometric drawing had been small in scale and austere and angular in its contours. The figures now became larger—sometimes almost too large—their contours fuller and more curved, the ornament flamboyant. The increased size of the figures allowed them to occupy a more important position on the vase, and the ornament became subordinate; the geometric textured surface disappeared, and the vase was divided into clearly defined zones and panels, some deliberately subordinated to others.

It is customary and convenient to classify archaic Greek pottery in two main divisions, eastern and western; but several subdivisions are possible, especially among the western centers of production. The main technical distinction between east and west is the use by western vase painters of incision, i.e., the cutting or scratching of details of the design through the slip before the vase was fired. This particular variant of a very ancient method of decorating pottery was borrowed from the chasing of metal; it seems to have been introduced early in the 7th century by the vase painters of Corinth and, being more appropriate to a silhouette than to an outline style, may have assisted the reversion to silhouette (a silhouette vivified by inner markings) that took place in mainland Greece toward the end of the 7th century. Eastern Greeks preferred the outline technique and rarely used incision, rendering the inner details with painted lines. Another peculiarity of eastern Greek work was the use of a white slip over the whole surface of the vase, on which the decoration was painted. This had two results: it was no longer important what color the clay walls were, since they were concealed by the slip, and it did not matter how rough the clay was, so long as impurities did not cause it to burst or crack. Thus eastern potters were at a disadvantage in the later archaic age when they were in competition with wares like Corinthian and Attic, whose attractiveness was partly due to the fineness of the pot shapes, the thinness of the walls, and the pleasing color. Eastern Greece was more monotonous in its choice of subjects, being content with animals only and, generally speaking, with only one kind of animal in each zone. Narrative or mythological scenes were rare.

A feature common to most early archaic vases is the filling ornament. The archaic artist disliked wasting space and therefore filled the interstices of his design with little ornaments of a geometric or floral character. The effect could range from a gay enhancement of the main design, where this was repetitive and had no story to tell, to a ludicrous encumbrance of some narrative scene, and it survived longer in the east, where pure decoration predominated, than in the west, which was more interested in human activities. Another characteristic of the

archaic artist, and one which he shared with the child, was the desire to display all the significant details of a figure, even if these would be out of sight when seen from a single viewpoint, and to display each in its most memorable aspect. He was dealing in mental rather than visual images, and he assembled from his memory such forms as would serve to convey his conceptions most vividly. For example, the eye would be shown in its full length even in a profile face; a breastplate on a warrior in profile would be shown in a frontal view. For more complicated structures there might be special formulas in which elements known to exist were deliberately eclipsed: for example, a four-horse chariot seen from the side was apt to have the near wheel exactly eclipsing the far one, while the four horses might appear as two, each with a doubled outline. (This is in contrast to the method of the earlier Geometric artists, who, in the side view of a chariot, usually showed the two wheels one beside the other without overlap.) The boldest views were sometimes attempted, a chariot seen from the front being the favorite. This was rendered not in true perspective or even with studied foreshortening but as a kind of diagram: the horses turned their heads sideways to produce a characteristic profile view, but their chests and forelegs entirely eclipsed the rest of the body, and the wheels of the chariot appeared as thick vertical lines.

Eastern Greek pottery. One of the most widespread eastern Greek wares of the 7th century was the so-called "Rhodian" (PL. 335). Although Rhodes seems to have been one of its places of manufacture, similar pottery may have been made in other centers, probably Samos, Miletos, and Chios. The decorative patterns were bold but finely drawn, the lotus flower and bud being a favorite; the animals forming processions in successive zones round a vase were lively and expressive, the heads usually in outline, the bodies in silhouette; and there was free use of additional colors such as white and purple. Filling ornament — large but careful — again abounded and, on the rare occasions when figure scenes occurred, seriously impeded the action. This type of Orientalizing "Rhodian" ware was succeeded in the early 6th century by pottery called "Fikellura," after the cemetery of Kameiros (Camirus) in Rhodes, where much of it has been found. Here bold floral and spiral patterns persisted, but in subordinate positions or in clearly defined areas; the main field tended to be clear of ornament and devoted to a procession of larger animals or to one or two figures on a large scale — a partridge, a running hare, a dog pulling down a hare, a human runner instinct with energy. As a rule all the details were painted, but incision was used on a few late vases of this type. Perfume pots in the form of animals, helmeted male heads, and female half-figures were made by Rhodian potters a little before 600 and continued for half a century, succeeding (and perhaps imitating) the exquisite little perfume pots made in Corinth a generation before and rivaling the contemporary Corinthian products.

A comparatively small class of eastern Greek vases is assigned to Klazomenai on the ground that the peculiarities of style and technique closely resemble those of the clay sarcophagi made and mostly found there. More than a hundred of these sarcophagi are known, decorated in vase technique, in either outline or black-figure, on the broad flat rim and sometimes also on the inside and outside of the sarcophagus itself and on the gabled lid. Various animals, centaurs, horsemen, and warriors were common subjects. The style somewhat resembles that of the frieze of the Siphnian Treasury at Delphi.

A group of eastern Greek vases may be mentioned here, although they seem to have been made not in Greece but in Etruria, by an immigrant Ionian vase painter, in the third quarter of the 6th century. Many of them were found at Caere, and they are therefore called "Caeretan." The shape is the hydria, a three-handled water pitcher. Almost all are humorous, often with a pretty touch of irony — Herakles turning the tables on Busiris, who was about to sacrifice him (PL. 362), an Arimasps overtaken by a griffin whose gold he has just stolen — and in the best the drawing matches the subject. Polychromy and incision were used.

Western pottery. a. Laconia. We now pass to western Greece and first to the Peloponnesus. Excavation and study of works of art which can be attributed to Laconia have shown that the literary records that stress the austerity of the Spartan regime have been misunderstood; for in the 7th century and the early part of the 6th, Laconia was a flourishing center of artistic production. The style of its vase paintings, however, had neither the fineness of proto-Corinthian nor the grandeur of proto-Attic, and the figure scenes of the best period (the first half of the 6th century) were distinguished by the interest of their subject rather than by the excellence of the drawing, which was often coarse and sometimes clumsy. The general effect of the vases was pleasing, with a distinctive color scheme of cream slip patterned with black and purple. The black-figure stage — black silhouette with incised details and white and purple touches — about 550 had some lively scenes: one is of special interest in that it purports to represent Arkesilas, king of Cyrene, superintending the weighing of local produce on board a ship (PL. 338). Silphium — an aromatic vegetable which could also be used medicinally — was the staple commodity, and this one would expect to be the object of such careful royal supervision; but the substance in the scales looks more like wool. This scene, and a fragmentary cup with a picture of the goddess Cyrene, led scholars to give this ware the name of "Cyrenaic." A chief place for its manufacture is now known by excavation to have been Sparta; but Cyrene was a Spartan colony, and workshops there too are not unthinkable.

b. Corinth. The chief pottery of the Peloponnesus was Corinthian, and although it underwent the same broad changes as other Greek wares, it touched at various times a higher level than any except Attic and a lower than any except Boeotian. About 650 it produced a series of vases, the so-called "polychrome proto-Corinthian," formerly attributed to Sikyon, which in some respects — for instance, the restrained use of filling ornament and the feeling for the third dimension — were far in advance of their time. The drawing was of exquisite precision, the ornament crisp and delicate. Narrative scenes were the rule — battles, hunting, riding, and some mythological incidents; and four colors — red, purple, and light and dark brown, as well as white — added gaiety to the figures. This masterly style, so far ahead of all other contemporary vase painting and in some respects only rivaled by that of Athens more than a century later, can best be explained by supposing that the talent and skill of free painting, in which Corinth traditionally held the lead in very early times, had been turned momentarily, perhaps by only one painter, to decorating vases. The careful arrangement and overlapping of the figures to suggest depth indicate that this is not primarily a vase painter's style; this is what the ordinary vase painter seeks to avoid, for his emphasis must be on surface and its decoration, and anything that appears to break through the surface defeats his aim. This style is usually found on small vases, many of which are modeled or partly modeled into the shape of animals. They may have been filled with perfume in Corinth itself (which, as a great trading center, is likely to have received it in bulk from Eastern sources) and exported; whether, if so, the container was more highly esteemed than the contents, we cannot say, but empty or full, they were certainly precious. Corinthian vase painters were at the same time producing vases decorated in the ordinary manner with zones of animals, neatly drawn and lively but with no great interest of subject.

The next phase, in the later 7th century, was one of commercial expansion accompanied by artistic degradation; the figures were carelessly drawn and the filling ornament rough and large. But the popularity of this pottery can readily be understood: the pots were of fine clay, thin-walled, and of pleasant even if not noble shapes; their surface was like a warmly colored carpet, a rich brown and red, with a yellow ground on which animals walked among flowers. Whatever the causes, Corinthian pottery dominated the markets of the Greek world at the end of the 7th century.

To the early 6th century belong a number of clay plaques with pictures fired on them, by Corinthian vase painters. Most

are carelessly drawn, but the subjects are of interest, since many of them depict the life of the potter: he is shown throwing the pot or regulating the furnace, and on one there is a schematic view of a number of pots lying in the kiln.

During the 6th century all Greek vases tended to become black-figured — that is to say, the field was cleared of ornament, and scenes with black figures, incised details, and touches of red and white occupied most of the vase, although the zones of animals survived on a diminished scale above or below the main picture. Corinthian vase painting followed the general trend except that it used more colored details; by the middle of the 6th century it was in obvious competition with Athenian vase painting, attempting to mask the naturally pale color of the clay by the application of a reddish surface resembling that of the contemporary Athenian vases.

The Amphiaros crater in Berlin will serve as a specimen of the best Corinthian vases of this time. The same subject (the departure of the hero Amphiaros to join the expedition of the Seven against Thebes, in which he died) was depicted on a famous work of Corinthian art, the inlaid cedarwood chest of Kypselos at Olympia, which Pausanias (the Greek traveler of Roman times) describes; and his description of some of the details fits those on the vase in a remarkable way, as if the vase copied the chest or both derived from a common prototype. The picture well illustrates the conventions by which the painter sought to convey in two dimensions, on his narrow picture band, the surroundings of a scene being enacted in three dimensions in the precincts of a palace. In due order are displayed the portico in which are grouped the members of the household the hero is leaving; the chariot with its restive team, and the charioteer receiving a stirrup cup; the entrance propylon of the courtyard; and the family seer, who foresees the tragedy, sitting in the dust beside it. The subtleties of this scene must have been apparent to those familiar with these conventions; one of them — that women have almond-shaped eyes and men have round eyes — is here extended to the horses. Every vacant space is occupied by an animal of some kind (eight are present in addition to the horses), a strange survival of filling ornament and of the animal decoration that was so long in being replaced by human figures.

The Amphiaros crater is one of the last important Corinthian vases. Corinthian pottery as an export ware was eventually driven out by Attic; many small pots, especially globular oil flasks, continued to be made, but there were no large Corinthian vases of any interest after 500.

c. Chalcidian ware. The ware called "Chalcidian" covers the last three-quarters of the 6th century and has points in common with both Attic and Corinthian. Whether it was made at Chalcis in the island of Euboea or in a Chalcidian colony in Magna Graecia is still uncertain. Its vase shapes were robust and its ornament bold and sharply drawn, a rosebud pattern of exceptional beauty being peculiar to it. There was an Ionian exuberance about the narrative pictures, and the vigor of the battle scenes was unsurpassed. There were carefully thought-out schemes for suggesting recession in space: on one vase a single complex but compact silhouette suggests by its contours and its use of differing colors a group of five oxen. There was also a fondness for showing figures in contorted positions and with heads facing the spectator: the formulas — they can hardly be called foreshortenings — used to suggest these positions were so confident that the existence of a school of free painting in which they were practiced is not improbable.

d. Attica. There is ample material for the study of Athenian pottery and vase painting from their earliest stages down to the series of little masterpieces of the end of the archaic period, which for clarity of shape and fineness of drawing have never been surpassed, while the pictures are one of the main sources of our knowledge of the daily life, myths, and religion of Greece.

Like other wares, Athenian vases exhibited strong Oriental features during the 7th century, both in subject and in manner of drawing. At the beginning of the century the angular geo-

metric silhouettes became rounded, the figures began to bend and move, and the rectilinear ornaments by which they were fenced in gave place to luxuriant patterns, many of which were derived, through Oriental models, from plants. In the middle of the century the outline style was dominant; figure subjects became more common and occupied a more important position on the vase, and the living beings, whether human or animal, were drawn with great breadth and vigor (PL. 339). Even at this early date there was sometimes a grandeur which presaged the classic period. White was used to differentiate the flesh of women from that of men and for drapery.

At the end of the 7th century the beginnings of the black-figure style appeared: silhouette replaced outline, and the ornament became neater and less exuberant. White continued to be used, for women's flesh and for other touches, as did purple; but while the general appearance of the vase became redder, the figures were blacker and details were incised instead of being painted: vase painters were beginning to work out a style appropriate to the object they were decorating, for solid black figures are more telling than outlines, especially on a curved surface. At the same time the potters' technique was improving: the clay was fired to a warmer color, and the surface, by admixture of a red earth discovered only in Attica, was toned warmer still, while the black attained depth of color and beauty of surface. These were the qualities which, added to perfection of style, carried Attic vases into all the markets of the Mediterranean, up into the Black Sea, to Gaul and Spain, and especially to wealthy Etruria. The style reached its climax about the middle of the 6th century and sustained it for a generation, during which time even among those vases that have survived — we have no way of determining what proportion of the total they represent — the average is high and there are many of the highest quality. With the invention of red-figure about 530 it began to lose its predominance, and except for special purposes it was extinct by the end of the archaic period.

The "François Vase" (PLS. 348; II, 36), from an Etruscan tomb at Chiusi (Clusium), may be cited as an example of the first flowering of black-figure Attic pottery. It is signed by the potter, Ergotimos, and the painter, Kleitias. A large mixing bowl for wine, it is old-fashioned in the arrangement of its decoration, since it bears six narrow bands of figures, a survival of the old Orientalizing scheme, instead of a smaller number of broader bands. One of them is even filled with animals, though these are combined into active groups, quite unlike the static array of a century before; as in architectural sculpture, the Greek artist was slow to eliminate these survivals of a past tradition. Although one of the friezes is larger than the others and bears the most important scene, it is not predominant: the smallest one is nicely adapted both in subject (the pygmies) and in size to the low foot of the vase which it decorates, but the principle is to distribute the figures over the whole surface of the vase and not to subordinate some parts of the decorative scheme to others or to one main theme. The general effect is impressive, but there is no focal point, and the eye is not held by any striking balance of masses but is led on to examine one after another the hundreds of figures which cover the surface in a series of narrative scenes.

Perhaps the greatest black-figure painter was Exekias: he was certainly the grandest. His majestic figures were never weakened either by their sensitive gestures or by the wealth of patterned detail with which they were sometimes adorned; the language might be archaic but the spirit was classic (PL. 349). Vividness of narrative and an expressive, half-humorous vigor were the marks of most black-figure vase painters, especially in their favorite "little master" cups, in which a single man or animal or a simple group formed a focus on the reserved band of red; and neat inscriptions often played their part in the decorative scheme.

Black-figure, for all its decorative quality, was confined within the limits of a somewhat narrow convention. Figures had to be flattened out in order to make their silhouettes intelligible. The diagrammatic formulas by which painters attempted to suggest the recession of figures into space could

not forever remain a substitute for foreshortening, and foreshortening was virtually excluded by the limitations of the technique. Although the inventor of red-figure, the technique that succeeded black-figure, may not consciously have intended it, the invention did give greater freedom in this respect, for it substituted for the single medium of incision two kinds of inner marking: the so-called "relief line," in which the slip was applied at full strength to produce, when suitably fired, a wiry black line standing up from the surface of the vase; and a softer, fainter line when the same slip was diluted. Either was more flexible than the incised line, and used in conjunction they were able to convey two shades of emphasis; but in the first stages of red-figure their full possibilities were not realized, and inner markings were few. The new technique consisted in "reserving" the figures in the reddish color of the surface of the vase and painting the background black, the appearance, though not the method, being simply a reversal of black-figure.

Artists' signatures were rare in the first half of the 6th century; in the second half it became less rare, though not by any means common, for painters and potters to sign their vases. But this does not make their identity as clear as might be thought. A few vases are signed, "So-and-so made and painted me," which is explicit enough, meaning that he both made the pot and painted it himself. The simpler "So-and-so painted me" is explicit as far as it goes, although it says nothing about the potter; but "So-and-so made me" is ambiguous: it might mean that he only fashioned the vase, it might mean that he both made the vase and painted the picture on it, or it might simply mean that he was the proprietor of the establishment from which it issued.

The inventor of red-figure may have been the pupil of Exekias who painted certain vases signed by the potter Andokides (some of which have a black-figure picture on one side and a red-figure picture on the other, sometimes of the same subject) and is therefore called the "Andokides Painter" (PL. II, 37). But whether or not he was the inventor, it can readily be seen how the new technique might have arisen, for on many black-figure vases there were areas reserved in red.

The two techniques coexisted for fifty years or so, after which (save for small casual vases) black-figure survived only on the Panathenaic amphorae. These were given, full of olive oil, as prizes at the Panathenaic games and bore a picture of Athena on one side and an athletic contest on the other.

Many thousands of Attic red-figure vases have survived, and hundreds of their painters have been identified on grounds of style, conventional names being assigned to them where the real names are not known. It is not easy to select a few pieces from those produced in little more than a generation down to the end of the Persian Wars. The idyllic perfection of Epiktetos was matched by the steady practical experiments of Euthymides in the foreshortening made necessary by attempts at new poses (PL. II, 38): on one such picture in which he has painstakingly shown three unsteady revelers at difficult angles he triumphantly inscribed the boast, "Euphronios never did the like." The work of Euphronios we know (PL. 366), and there is little to choose between the two in excellence, although they differed in their aims. Euphronios was the more accomplished and elegant, yet for all his exquisite anatomical patterning, not lacking in strength. Their successors were Epiktetos the Second (formerly known as the "Kleophrades Painter"), who carried on and developed the strong style of Euthymides to the verge of the classic, and the "Berlin Painter," a master of austere and graceful composition, the artistic descendant of Euphronios. Contemporary with them were the "Panaitios Painter," subtly expressive in gesture; the lyrical Onesimos; and the "Brygos Painter" (PLS. 373; II, 38), passionate and passionately interested in rushing movement. All these painters and many more expressed their individuality within the same general conventions. It was by this concentration on certain problems within certain comparatively narrow limits that the Greeks were able to reach such heights and to set such permanent standards.

Bernard ASHMOLÉ

DEVELOPMENT, DIFFUSION, AND SURVIVAL OF ARCHAIC ART. What has so far been stated, with respect to the great monumental types and the development of the styles and forms through which archaic art is expressed, demonstrates the difficulty of dividing this period into well-defined successive stages or widely diffused styles that can be recognized in contemporary works of diverse categories. Even if the stylistic evolution is evident, the classifications proposed by various scholars are, for the most part, of a conventional and subjective nature that cannot be translated into universally acceptable formulas. Generally these classifications are based on sculpture. A traditional outline, still widely followed in textbooks, divides archaic art into two principal periods, the first extending from its origins down to the middle of the 6th century, and the second from the middle of the 6th century to the beginning of the 5th. Another popular division distinguishes three phases, indicated by the terms "early archaic" (*Früharchaisch*, *arcaico antico*), "middle or ripe archaic" (*Reifarchaisch*, *arcaico medio or pieno*), and "late archaic" (*Spätarchaisch*, *tardo arcaico*); but the actual limits of these stages seem to waver, depending on the author. Some (e.g., Schrader) extend the first to the middle of the 6th century and even beyond, others, such as Richter, arrest it about 575, placing the transition from middle archaic to late archaic somewhere about 525 to 510. Naturally these classifications become more complex if the primitive Geometric and Orientalizing stages are included or if an attempt is made to subdivide the periods even further. A classification such as Rumpf's, based on the recognition of more numerous and shorter interconnected periods, comes closer to actual fact and is more easily detected in painting. A "subarchaic" phase has been suggested by Gjerstad to define the continuation of archaic motifs beyond the terminal limit of Greek archaic about 480, in remoter zones such as Cyprus and Etruria.

There is no doubt that, quite apart from the conventional subdivisions, the course of development of archaic art can be traced by characteristics that were common to its sculpture and draftsmanship (with architecture providing only minor evidence, except for its decorative elements). Until the first half of the 6th century, the oldest period was dominated by "Daedalic" sculpture and the associated Peloponnesian schools which continued it (see above, especially *Free sculpture*), and by Corinthian painting. But already in the decades preceding the middle of the 6th century, the rigidity and abstraction of the primitive forms began to give way to the powerful influence of other art centers, particularly the Attic, which — both in sculpture and in vase painting — was shortly to become the fulcrum of artistic production because of its progressive anatomical experimentation and its boldness and freedom of composition (PLS. 344-349; 351-353). Meanwhile, about the middle and throughout the third quarter of the 6th century, the Greek schools of the east with their characteristic style, so original yet sensitive to Asiatic inspiration, also flourished. The style became the fashion and rapidly spread to the centers of continental Greece, westward to Italy, and especially to Etruria, where it was still dominant at the end of the century; so the term "international Ionic" (Bianchi Bandinelli) seems to some extent justified (PLS. 356-363). The final archaic period, from the end of the 6th century to the first quarter of the 5th, was characterized by the decisive advances of Attic and Peloponnesian art toward a style in which the search for reality and a sense of structure were combined with a tendency to introspection, forecasting the conquests of the classic period (PLS. 365-371, 373, 374).

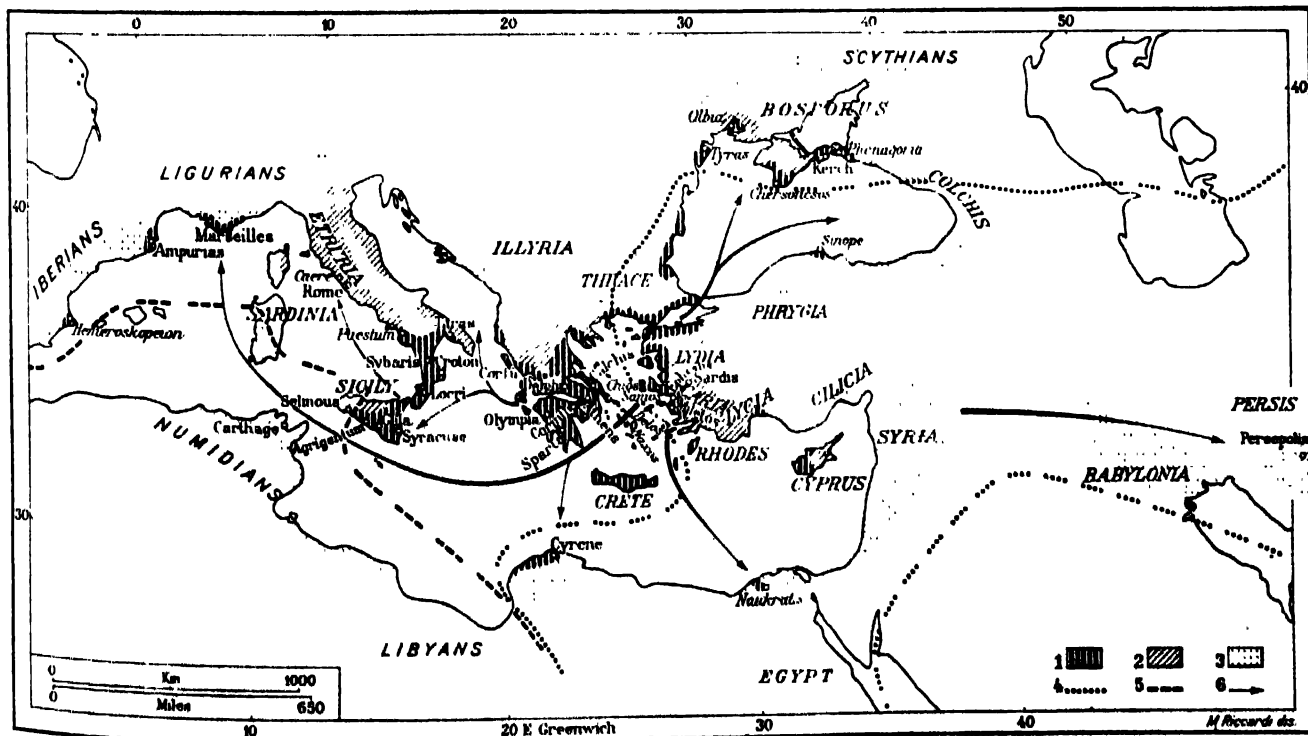
As already noted, archaic art was a result of the activity of various cities and regions of the Greek world. Primary centers were, successively, Crete, the western Peloponnesus (especially Argos and Corinth), Athens, and the great cities of Asian Ionia; secondary centers included the rest of the Peloponnesus, Boeotia, the Aegean Islands, northern Greece, and the Greek colonies in the east and west. The production of these remoter regions not only reflected the influence of the more important centers but often contained also a peculiar and distinct flavor, particularly in the pottery and small-scale sculpture of the early and middle archaic periods. The great Panhellenic sanctuaries of Delphi and Olympia were the points of concentration for

the artistic activities of the various schools, and there is ample archaeological evidence that they functioned as crossroads for the coming together and exchange of ideas. Archaic art, while essentially and primarily a Greek phenomenon (in that it was the Greek interpretation of the experiments in representation that had started in the Near East at the dawn of the great historical civilizations), was not confined to the territories that were strictly Greek in race and language or even to those which in one way or another were reached by Greek colonists. The colonies themselves spread the civilization of Greece to isolated areas, far from the mother country: to the European and Asiatic coasts of the Black Sea, along the rim of the Anatolian peninsula, to the Nile delta, to Cyrenaica, to Illyria, to southern Italy, to the large islands of the central Mediterranean, and along the Ligurian and Hispanic coasts. Contact was made with many non-Greek peoples. Some of these began more or less decisively to gravitate toward the Greek world or, at any rate, came to accept various elements of it; archaic art thus penetrated into semi-Hellenized or distinctly non-Hellenic territories — the area of the Bosphorus (see *GRECO-BOSPORAN ART*), Asia Minor (see *ASIA MINOR, WESTERN*), Cyprus (see *CYPRIOTE ART, ANCIENT*), non-Hellenic Italy (see *ETRUSCO-ITALIC ART*). Nor did it fail to exercise some influence on the contemporary art of Syria (see *SYRO-PALESTINIAN ART*) and the western Phoenician colonies (see *PHOENICIAN-PUNIC ART*), Egypt (see *EGYPTIAN ART*), and even Achaemenid Persia (see *IRANIAN PRE-SASSANIAN ART CULTURES*), as well as the protohistoric West (see *MEDITERRANEAN PROTOHISTORY; EUROPEAN PROTOHISTORY*). We are thus able to speak of the "peri-Hellenic" and international aspect of the archaic style.

Naturally, as we gradually move farther from the main areas of archaic-art production and from the most important centers of Greek culture, two aspects of retardation become evident: on the one hand, the slower diffusion of motifs and the delayed acceptance of new ideas; on the other, the retention of stylistic traditions that, in the primary centers, were superseded by innovations. This has a bearing on the terminal limits of archaic art, foretold by the intensely fecund process of transformation toward classic forms about 480 B.C. in the heart of the Greek world (Athens and the western Peloponnese). Else-

where even in Greece itself, these limits seem here and there to extend into later decades of the first half of the 5th century, while in still remoter areas — in Asia Minor, in Cyprus, in Etruria — they stretch even further. Archaic survivals came to an end with the spread of the classic style; wherever it gained the upper hand only slowly or partially or superficially, the archaic conventions tended to remain alive in the internal structure of the figures (even if externally it was already inspired by classic models) or in individual instances of frontality, of geometricism, or of decorative abstraction in the rendering of details. Such primitive traditions endured for a long time on the fringes of Greece proper, in Asia, Cyprus, Italy, and western Europe. However, these areas were also influenced by Oriental styles, still fertile and alive, from Mesopotamia, Syria, Persia, Egypt, etc. Furthermore, local prehistoric and protohistoric traditions led spontaneously to simplification and impoverishment of forms wherever the environment, for reasons of race or culture, was inhospitable to the new classic ideals. The problem is indeed complicated. Essentially the question is whether and to what extent certain aspects of peripheral and provincial art that continued into the classic, Hellenistic, and Roman periods should be considered survivals of the archaic, especially as they reappeared in the Late Antique period and the Middle Ages. Yet another point of archaic persistence is provided by the archaizing and archaistic symptoms that cropped up in the Greek classic period and even more in the late Hellenistic epoch and the early Roman empire (see *ANTIQUÉ REVIVAL; NEO-ATTIC STYLES*).

CONCLUSIONS. For a long time the archaic period in Greece was valued as little more than a preface or introduction to the great and better-documented classic era, whose archetypes have left a deep imprint on later cultures and whose painters and sculptors still have a legendary reputation today. Moreover, the classic age saw the development and ripening of ideas born previously, when the archaic concept of man looking outward upon the surrounding world gave way to the concept of man considering his own thoughts and feelings, evaluating his motives and the consequences of his actions. All this is true, but there are other considerations.



Diffusion of archaic art. Key: (1) Areas of origin and most intensive development; (2) areas of secondary development; (3) areas of indirect and attenuated influence; (4) boundaries of the Persian empire at the beginning of the 5th century B.C.; (5) boundaries of Carthaginian influence at the beginning of the 5th century B.C.; (6) paths of diffusion and influence of archaic art.

If Greece had been conquered by Persia at the beginning of the 5th century B.C., and if from that moment its civilization had declined, its art would nevertheless have survived. Architecture had already created, at that time, the two principal orders, and temples had arisen in no way inferior, either in size or splendor, to those of succeeding eras. Even if sculptors had not yet achieved the skill to produce colossal statues of bronze, of gold, and of ivory, the marble sculptures of the age, the small bronzes, and the surviving archaic ivories still seem to us of unsurpassed quality. Paintings were also small, for it was only in the classic period that vast wall compositions were undertaken. However, the level reached by mural and panel painting of the archaic period is unquestionably high, and painted vases — which, owing to their great number, naturally vary in quality — are often exquisite works. Not only because of their quantity, but also because of their variety and uninterrupted development, these paintings furnish chronological and cultural data which can be applied, to some extent, to the other arts; the vast repertory of themes which they illustrate are a mine of information on the mythology and daily life of the age. Moreover, the art of coinage in the archaic period established the forms common to all coins to this day.

All evidence indicates that the archaic period established the artistic modes and conventions which were to face the test of centuries in the Western world. Within a few generations the archaic style shed the rigid stiffness which survived elsewhere for thousands of years, and in certain respects it attained a level of unequalled independence. Freeing itself of its early limitations, it assumed other self-imposed conventions: for example — first unconsciously and then ever more consciously — it was dominated by an image of beauty which did not depend on the mere imitation of nature but reflected an ideal intrinsic to the style. To this image all newly acquired understanding of the structure and function of the human body had to conform, and the ever-freer compositions that this knowledge made possible were held within the scheme. The interest of the artist was concentrated on a limited number of types which he sought by constant improvement to carry to perfection. This goal, of course, was not always attained, but the force inherent in the effort often endowed the work of the archaic artist with a freshness and awareness all the more esthetically moving when the desired perfection was not quite fully achieved.

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ARCHITECTURE. Modern thought does not recognize as valid any theory of art that applies exclusively to a specific creative activity. In other words, there is no "aesthetics of architecture" distinct from that of poetry or music, sculpture or painting. For this reason, broad considerations of art and aesthetics are not covered here but in the appropriate general articles (see **ART** and **ESTHETICS**). Geoffrey Scott (*The Architecture of Humanism*), Benedetto Croce (*Alcune difficoltà concernenti la storia artistica dell'architettura*), and Adolfo Venturi (*Sul metodo della storia dell'architettura*) have perhaps been most effective in discrediting the misconception that architecture is a unique artistic manifestation. The presumed heterogeneity of architecture has been argued at length from several points of view, ranging from the utilitarian to the technical. In the aesthetics of modern philosophers such as Gentile, Dewey, Whitehead, Spirito, and Calogero, however, it receives far less attention than it does in the comparable works of earlier theorists, such as Hegel, Lessing, Schopenhauer, F. A. Schlegel, and Semper, who considered architecture an art in itself, ruled by its own peculiar laws.

The reduction of various creative activities to the single category of art helped to revolutionize architectural history, freeing it from a host of eclectic interpretations that had stifled its development for centuries. In fact, architectural criticism has followed such a conceptually uncertain and methodologically wavering course that Lionello Venturi's charge seems justified: "Architectural criticism was much less developed in classical antiquity than the criticism of painting or sculpture. Thus it has remained" (cf. *History of Art Criticism*, p. 53).

Most of the treatises on architectural history have been written by scholars who could be defined only with difficulty as art historians; rarely have their erudition and philological interests been illuminated by a true artistic sensibility. From Vitruvius to Serlio, from Vignola to Blondel, from Viollet-le-Duc to Julien Guadet, these authors, with few exceptions, have displayed the mentality of the specialist, and architecture has thus been consigned to a sphere on the edge of, or even outside, the history of art. On the other hand, few art historians have been as interested in architecture as in painting or sculpture: one need only cite Giorgio Vasari in the Renaissance and Adolfo Venturi in modern times. Most of their colleagues also excluded architecture from their researches, tacitly accepting the assumption that it is a "different" art requiring special techniques and special knowledge. Even though Franz Wickhoff in his *Die wiener Genesis* (1895) prepared the critical reevaluation necessary to clarify the characteristics of Roman figural art in all its aspects, he failed to write a chapter on the architectural parallels to illusionism and continuous narrative.

The separation between art history and the history of architecture has thus been perpetuated for centuries. Art historians accused architectural historians of critical backwardness and denied that they contributed anything, except on the barest academic level, to an understanding of the vocabulary of form. Architectural historians, in turn, criticized art historians for failing to understand the complexity of architecture, for judging the monument solely on the basis of superficial and decorative characteristics and disregarding social content and basic structure. Between these widely separated poles of criticism, creative activity continued developing in an empirical manner, accentuating now the utilitarian or technical aspect of architecture, now the purely formal, but rarely finding a reflection of its own problems in architectural history.

Although the situation is now greatly changed, numerous questions on both architectural execution and the methodology of architectural history are still without answers. Victory over the misconception of the diversity of the arts, has, in fact, led some to the limited conclusion that architecture does not exist and that it can be discussed only on a vulgar and empirical level where its presumed distinctive characteristics — from the *utilitas* and *firmitas* of Vitruvius to the more recent *Raumgestaltung* — no longer have any substance. This approach serves to liberate architectural history from the traditional misconceptions, but it also encourages many thinkers and philosophers to overlook architecture and to evade the task of isolating its

concrete phenomenology. The same holds true for critics. Although demonstration of the errors in the theories of Adamy, Schmarsow, Wölfflin, Brinckmann, and Soergel has opened the way for a modernization of architectural history, it has also weakened the interest in architecture from which these critics, however mistaken, frequently drew stimulus and vigor.

It cannot be said, moreover, that the gulf between critic and creator has been completely bridged. Periodicals devoted primarily to modern painting and sculpture are directed by art critics, but practicing architects are generally in charge of architectural magazines. After the linguistic "rupture" of the 19th century, poets and musicians, painters and sculptors were able to integrate their creative activity by means of a critical literature capable of clarifying their problems, and they were quickly seconded by illuminating historians. Modern architects still await this event, for it is only the rare art historian who follows their work systematically.

The divergence of art history and architectural history and of architecture and the history of architecture has endured for centuries and still persists in some areas of contemporary research despite the diffusion of modern aesthetics. An analysis of the component parts of these disciplines therefore seems required. It is not enough to judge the average treatise on architectural history as *retardataire*; it is necessary to recognize and remove the methodological knots and intrinsic difficulties that have created, and in part justify, the architectural historians' "professionalism," which is completely removed from the general history of art. If it is relatively easy to attack the particular problems of architecture and its history from the point of view of the philosopher, it is extremely difficult to resolve them by applying an individual criticism, immersed as it is in urban life, in ancient and modern monuments, in spaces, volumes, and plastic images.

Even though the following discussion, which does not repeat the arguments of the author's book *Architecture as Space* (New York, 1957), distinguishes between the treatment of architecture and the treatment of history, the problems of creation and criticism are considered simultaneously throughout this essay. In all ages an artistic consciousness has illuminated architectural criticism, and, at the same time, criticism has decisively influenced the direction of creative effort. The mission of architectural criticism is pursued with zeal in this essay, which lacks the academic detachment of comparable discussions and is purposely not written with dispassionate objectivity; however, the subject matter itself justifies this attitude.

The architectural critic, and hence the history of architecture, does not serve solely to make the past live again or to award renown to a particular contemporary work or artist. He decides the fate of architecture itself, both ancient and modern. The vandalism against monuments and their settings, which has occurred with ever-increasing frequency since the Renaissance, the perennial disfigurement caused by unreasoning restoration, the construction of mediocre or even atrocious buildings, and the prolonged ostracism of the truly modern creator result largely from the lack of a vital historical conscience and from the struggle between a reactionary sense of history and an artistic impulse not yet developed to full maturity. The continued existence of the monuments of the past in their proper settings depends on the persuasive power of the architectural critic. The recognition and the actual realization of contemporary works are conditioned by his judgment, for he is frequently responsible for selecting the project and the architect. Creation and criticism meet in every important architectural problem — a fact that demonstrates the futility of any attempt to reconstruct the change in the "concept" of architecture, to separate history from architecture, or to trace a history of architecture that excludes architectural practice and its problems implied.

SUMMARY. Definition of architecture (col. 627): Cultural, psychological, and symbolic interpretations; Functional and technical interpretations; Linguistic interpretations; The spatial concept: a. The art of space, the art of time, space and time; b. Space in the visual arts and architectural space; c. Artistic space and physical space; d. Category and personality in space; e. The space of the facade and of volumes; f. Identity between interior and exterior space; g. Architecture "with"

and "without" interior space; *h. Conclusion.* The problems of architectural history (col. 649): *Urban conditioning of the architectural vision; Poetry and prose in architecture; The genesis of architectural works; Project and execution; Design and architecture; Economic restrictions; Art and technique; Building typology; Architectural theory and the creative personality.* Architecture and its history (col. 684).

DEFINITION OF ARCHITECTURE. Analysis of the terms denoting "architecture," or, more often, "construction" and "to construct," in ancient and modern Indo-European languages is of limited assistance in attempting to define the art. In most modern European languages the words are similar: Italian *architettura* and *architettura*; French *architecture* and *architecture*; English "architect" and "architecture"; Russian *arkhitekt* and *arkhitektura*. They all go back to the two Latin words *architectus* and *architectura*. The Russian *arkhitekt* is modeled on the Latin *architector* found in fairly late texts (4th–5th cents.). German is unique, as it often is in respect to learned words, in that there are not only the Latin derivatives *Architekt* and *Architektur* but also the terms *Baukunst* and *Bauleiter*, or *Baumeister*, which are semantically related but Teutonic in origin.

The Latin source words are, in turn, borrowed from the Greek ἀρχιτέκτων and ἀρχιτεκτονική (τέχνη). Although the derivation seems quite obvious to the popular mind, it gives the linguist considerable difficulty, for the two Greek words should have given the Latin form *architecton* (actually found in Plautus but in the sense of "meddler") and *architectonica* (found in isolated examples as an adjective with *ratio* but not with *ars*). No matter how obscure the derivation, the two Latin words certainly come from the Greek (see M. Niedermann, *Glotta*, XIX [1930–31], p. 1 ff.). Vitruvius, and his Greek sources before him, built on these terms their speculations and definitions of architecture, which "nascitur ex fabrica et ratiocinatio," that is, is born of practical experience and knowledge of theory (Vitruvius, *De Architectura*, I, 1).

A review of the various foreign-language terms denoting the activity of the architect shows that they accentuate sometimes the practical, technical side, sometimes the artistic. Old Irish *cunatgim*, "I construct," probably derives from the Indo-European root **dheigh-*, from which are also derived the Sanskrit *dēhmi*, "I shape," and the Latin *figere*, "to model." The group tends to stress the artistic activity. The manual aspect, however, is accentuated in the Welsh *adeiladu*, connected etymologically with the Latin *plectere* and denoting originally "to plait" (branches for building huts). In the same way the modern French *bâtir* derives from the Germanic *bastjan*, "to plait bark." The modern Irish *foirghnighim* emphasizes execution. A series of terms in the Germanic and Slavic languages, derived from the Indo-European root **bho(u)-bhu-* (which has also given, with different gradations, the verbs indicating "to be born" and "to be": Latin *fin*, *fui*; Greek φύμα; Sanskrit *bhū-*; also some forms of the German verb "to be"), have the double meaning of "to inhabit" and "to construct." To this series belong Old German *būan* and German *bauen*, "to build"; English "build"; Danish *bygge*; Swedish *bygga*; Icelandic *boggja*; Russian *byt*, "stone." The same duality of meaning appears in Slavo-Baltic words borrowed from Middle High German *buode* (modern German *Bude*, "hut"): Polish *budowac*, Czech *budovati*, Ukrainian *buduvati*, White Russian *budavač*, and Lithuanian *budavoti*. In Russian, *stroit* means both "to build" and "to arrange with order"; *stroitel* means "constructor," and *stroinstvo* means "order" or "harmony." Finally, in Sanskrit, *nirma*, derived from the Indo-European root **mē-* (from which derive also Sanskrit *mā-*, "to measure"; Greek μέτρος, "advice," and perhaps μέτρον; Latin *metior*; Gothic *mēl*, "a period of time"), may mean "to measure," "to execute," or "to construct."

If etymological research does not wholly succeed in clarifying the nature of architecture, the various definitions are even less useful. They float between abstract allusions, such as Schelling's "inorganic artistic form of plastic music" or Schlegel's "frozen music," and attempts to conceptualize — for example, "the art and technique of constructing buildings," the definition adopted by Giovannoni in his article in the *Enciclopedia Italiana*.

Although most architectural theorists have paraphrased the three requirements for good architecture that Vitruvius postulated on the basis of his Greek sources, they have not resolved the problem of eclecticism inherent in the diversity of the terms. If architecture must have *firmitas*, *utilitas*, and *venustas*, then, in order to judge its worth or to unravel its history, one must necessarily consider technical means, social phenomena and their representation in architecture, and esthetic results. Taken at the same value, these three aspects of architecture give rise to three histories, each justifiable in itself but out of step with the others. A consideration of architecture from the point of view of *firmitas* leads to a history of engineering, generally treated as developmental history. Such a treatment places overwhelming emphasis on periods of great technical inventiveness, such as the Roman, Gothic, or modern eras, and lightly passes over periods of lesser concern with structural problems. When *utilitas* alone is the criterion, whether practical-functional or symbolic utility, there is a tendency to establish a scale of values based on the representation of political and social, religious and secular, collective and individual concerns. Finally, a criticism that considers only *venustas* is in danger of becoming too abstract; exclusively concerned with questions of proportion, rhythm, balance between void and solid, eurhythm, and chromatic, luministic, atmospheric, and tactile values, it would be a history of forms without content or human implications.

Even though the Vitruvian triad does not provide a useful key for understanding architecture, most theorists and historians, from Alberti to Banister Fletcher and Louis Hautecœur, have accepted it wholeheartedly. Since, however, the abstract values of function, technique, and expression are not always in harmony, this eclectic position cannot create an integrated methodology but must often juxtapose, frequently in a mechanical and pedantic manner, three heterogeneous histories that do not permit a coherent or sure judgment of the monuments. Faced with this difficulty, some scholars, from Lodoli and Milizia to Ruskin and Wölfflin, have taken up only one of Vitruvius's criteria, either *utilitas* or *venustas*, and have rejected the other two. Despite their restricted point of view, the sureness and acuity of their personal interpretation have generally enabled them to achieve positive results in characterizing the artists or monuments of a given period. A final group of traditional historians, reluctant to make a choice, empirically superimposed social, technical, or esthetic considerations on one another in a confused and academically inadmissible mass of idealistic, positivistic, and existential criteria.

The innumerable definitions of architecture found in the treatises and in the general body of ancient and modern literature have in common the desire to answer three questions: What does architecture express, what does it represent, and with what symbols does it do this? Can architecture be characterized by its practical aims and its technical means, or does it become an art and rise above these bounds? Are there characteristics that distinguish architectural harmony, and does it have its own intrinsic laws? These three questions are rarely posed simultaneously, and the theoretical reply to any one of them is frequently contradicted by statements designed to satisfy the other questions. The definitions quoted below, therefore, do not do full justice to the authors, for though these writers may tend to emphasize positivist, symbolic, technical, or esthetic qualities, they do not generally reject interpretations that serve to explain the various other aspects of architectural reality. The major replies to these questions can be schematically grouped in the following manner.

Cultural, psychological, and symbolic interpretations. Various writers have held that architecture is valuable in that it represents the life, customs, social organizations, or aspirations of various peoples at various times. Horace Walpole: "Architecture is the most suitable field in which the genius of a people... may range." Tommaso Temanza: "Architecture is quite diverse because the different customs and different religions of nations are such that what is suitable and proper in one province is not in another." Vincenzo Lamberti maintained that architecture

has been "the keeper and the refuge of man's repose, the principle of society, the division of populations, their pomp and ceremony, the decorum of religion and the sustainer of human life." Pietro Selvatico: "I align myself with those who hold that architecture is the art of constructing buildings according to the civic or religious needs of the people and of decorating them in a manner which indicates their meaning and use." James Fergusson: "Treated historically... architecture ceases to be a mere art, interesting only to the artist or his employer, but becomes one of the most important adjuncts of history, filling up many gaps in the written record and giving life and reality to much that without its presence could with difficulty be realized." E. G. Boutmy: "A monument is not only the work of compass and square; its style does not depend solely on personal or professional taste. Behind the instruments of technique and the sensibilities of the architect there is a collective intelligence, passions, attitudes and needs felt by all that imprint a specific character on the architecture of any period.... Psychological environment explains the great monuments." Honoré de Balzac: "Architecture is the register of human history." Guy de Maupassant: "Across the centuries architecture has received the privilege of symbolizing every period, of summing up by means of a very small number of typical monuments the way of thinking, feeling and dreaming of a race and of a civilization." Victor Hugo: "Architecture is the book of human history. From the most distant pagoda of Hindustan down to the cathedral of Cologne it has been for six thousand years the handwriting of humanity. This is so true that not only every symbol but every human thought has its page in this immense book of monuments." T. S. Attlee: "Architecture is essentially a cooperative art.... It must express at any period the condition of the people as a whole — not merely the level of culture which its actual fashioners have reached." R. A. Cram: "Architecture alone seems to be the art that is greatest at the outset, probably because it is, after all, a communal art.... When it becomes the specialized product of the intensive genius of one man, as in the 15th century and again in the present century, its decline is inevitable." R. Atkinson and H. Bagenal: "The architecture of a period is the embodiment of its civilization." Talbot Hamlin: "Architecture is... the greatest and most real of all the arts, precisely because it has this unique social message, this tremendous social value." R. Lutyens and H. Greenwood: "Architecture tells us what they [a people] were, where and how they lived and worshipped, and their domestic and social habits, aspirations and achievements." B. Hume: "A building's design is an indication of the value of the particular society which has brought it into being.... Architecture depends not only for its forms, but for its very existence upon the organization and conduct of society as a whole."

This series of definitions is enough to indicate a critical direction: architecture is the mirror of history and social culture. In such a frame of reference the apparently paradoxical conclusions of Attlee and Cram are quite coherent. If the value of architecture lies only in the representation of a civilization in its generic and collective sense, then the architect of genius is an intruder in so far as he attempts to make his own vision dominate that of his society. Reduced to an impersonal activity, architecture becomes the least expressive of the arts, and, in fact, Nicolò Gallo states that it is "incapable of representing any effect, passion, or action whatsoever." The architect, as a result, seems a mysterious and stupid creature, or, to put it more kindly, a being so generous and so altruistic as to resemble God. In neither case is he a man and an artist. With subtle irony Claudio Tolomei, in 1766, wrote to Antonio Rusconi, the architect: "All the arts discovered for the comfort of man have paid more attention to the comfort of the inventor than to the public good. Architecture alone has devoted so much attention to the welfare of the public that the most famous architects are more concerned with building cities, theaters, palaces, labyrinths, and other notable structures than their own houses. Anyone who considers carefully the marvelous and useful success of this art will be constrained to admit that it does not seem so much human discovery as divine revelation."

(Transcribed from the collection of Ermenegildo Pini.) Pushed to the extremes of anonymity and indigence, the architect no longer possesses either a personality or a home.

The symbolic interpretation dominant in Early Christian and medieval literature, especially in the writings of St. Paulinus of Nola, Bishop Durant, and Honorius of Autun, still has numerous adherents — particularly among students of Oriental culture, where the literature proves the relation of architecture to symbolic themes. In the 19th century the major proponent of the symbolic doctrine was A. W. N. Pugin, who held that the dogma of the Trinity, redemption by the sacrifice on the cross, and the resurrection were the basis for the plans and structures of Christian building. E. B. Havell, who studied Islamic mosques, related the taste for the pointed arch in Saracenic architecture to the mihrab, which he interpreted as a symbol of sacred orientation, and suggested that the stalactite vault results from a multiplication of the mihrab form. The lotus, the symbol of creation and purity, the "footstool of the gods," according to Havell's outmoded interpretation, is the source for the horseshoe arch, for the tympanum, and for Buddhist domes; combined with other symbols, it determines the entire form of Hindu temples.

E. Baldwin Smith found in primitive domes a cosmic symbol venerated as the ancestral refuge of the tribe or as the representation of the celestial hierarchy. W. R. Lethaby elaborated on the observations of Maspero, Middleton, Fergusson, Bushell, and others and provided a magic interpretation for the entire morphology of architecture: the Egyptian temple was constructed according to the image of the universe held by the priests; the step pyramid, or "temple of fire," and the apadana, the columnar hall in Persian palaces, reflect the religious concept of heaven; the ziggurats are a ritual imitation of the cosmic mountain, which is the point of contact between the human and the divine. In his study of the symbolic content of the architecture of imperial Rome and of the Middle Ages, Smith concluded that every structure — from city gates to towered façades, from the castrum to the ciborium — serves to represent the power and authority of the gods. In his analysis of Indian art Heinrich Zimmer isolated the magic foundation from its embellishments and explained not only why the monuments are covered with such rich decoration but also why, in the elevation of Buddhist temples, the repetition of the central motif in miniature becomes the basis for the profuse ornamentation. Despite the character of Renaissance Humanism, Wittkower has demonstrated that central-plan churches correspond to an intentional religious symbolism that can be documented by the writers of the period.

Louis Hauteceur, in *Mystique et Architecture: Symbolisme du cercle et de la coupole*, presents an exhaustive study of the dogmatic, liturgical, and magic origins of the form of circular Mycenaean tombs of the 18th century B.C., but he is extremely cautious on the question of whether symbol or form had precedence. "It is difficult to know whether the symbol determined the form or the form the symbol or exactly what relationship existed between ideas and deeds. An idea can refer to a preexisting form and enrich it, and at the same time be modified by the form. The process can be reversed. A form can suggest a metaphor, a comparison, a symbol that reacts on the original form. Pascal has said, 'All things are caused and causing, aided and aiding.'"

In criticizing the works of Sedlmayr, Kitt, Kitchelt, and Zimmer — particularly Zimmer's concept of *Abbild*, a copy of a metaphysical or theological reality — Croce maintained that "the modern history of architecture acted correctly when it freed itself from all the symbolism of cathedrals and other buildings with which so many learned books are filled.... The same thing has been done to the allegories of 'Dante, although counter to his advice. Serious as these allegories were in his mind, they do not exist as such in his poetry, although this is not true of charlatanesque works like G. B. Marino's *Adone*." Despite several worthwhile contributions, the symbolic interpretation of architecture tends, like the cultural interpretation, to transport history to an impersonal, mystic, and transcendental plane.

Functional and technical interpretations. Judged by functional and technical criteria, the value of an architectural work depends on its practical aims, the materials used, and the methods of construction. As far back as 1576, Philibert Delorme stated that "it would be better for the architect to err in the ornaments of the columns, in his measures, and in the façades than in those fundamental laws of nature that pertain to the comfort, use, and advantage of the inhabitants. The decoration, beauty, and enrichment of the dwelling serve only to delight the eye, but they bring nothing useful to either the health or the life of man. Do you not understand that an error in the planning or the function of a dwelling makes the inhabitants sad, sickly, and uncomfortable?" Giovan Battista Passeri: "As for form, I maintain that it should depend on function and the different ways in which it is used." Twenty years earlier Francesco Algarotti had written: "Nothing should appear in the representation that does not truly have a function." Francesco Milizia said of architecture that "everything must arise from necessity, and necessity does not admit the superfluous." Viollet-le-Duc: "The beauty of a structure does not lie in the perfection produced by a highly advanced civilization or industry, but in the judicious use of the materials and means at the disposal of the constructor." Julien Guadet: "The architect must first of all determine the content, from which he can then derive the container." W. R. Lethaby: "It is impossible to differentiate architecture from building." A. Vaillant: "The building is a mechanical instrument, a machine constructed for some service." George Santayana: "Architecture... has all its forms suggested by practical demands. Use requires our buildings to assume certain determinate forms." Auguste Perret: "Structure is the mother tongue of the architect... Anyone who hides structure deprives himself of architecture's only legitimate and beautiful ornament. Anyone who hides a pilaster commits an error; anyone who puts up a false one commits a crime." Many critics have opposed such utilitarian or technical determinism. John Ruskin: "Architecture is only ornament applied to building." Gilbert Scott: "Architecture, as distinguished from mere building, is the decoration of the construction." Thomas Jackson: "Architecture is the poetry of construction... It is based on building, but it is something more than building as poetry is something more than prose." Martin S. Briggs: "Architecture... means building infused with imagination and dignity as well as with technical efficiency; it means, in fact, that it is the work of an artist and an expression of his personality." Edwin Lutyens: "Architecture, with its love and passion, begins where function ends." Reginald Blomfield: "The problem for the critic is... to find in architecture the personal equation of the architect, to read his personality in his work... Architecture... is an expression of human intelligence, conditioned by the same laws and capable of the same critical analysis as any other imaginative or intellectual effort." Blomfield posed the problem in modern terms by looking beyond the antithesis between function, or impersonal technique, and an equally impersonal decoration and centering his attention on the concrete activity of the architect.

It should be noted that the functionalist or technicist position more often represents a polemic against the simple decorative interpretation of architecture than a profound belief on the part of the architect or theorist. Vaillant, for example, after stating that the building is "a machine constructed for some service," added that its use includes not only physiological needs but "spiritual aspirations" as well. Perret listed the "permanent conditions" of architecture as "the climate with its inclemencies, the materials with their characteristics, statics with its laws, optics with its distortions," and then added, without further clarification and almost as though he were treating a perfectly natural and harmonious concept, "the eternal and universal sense of line and form." Alongside his well-worn definition of the house as "a machine for living," Le Corbusier juxtaposed his suggestive purist definition: "Architecture is the wise, correct, and magnificent play of volumes in light."

Linguistic interpretations. A search for laws to determine architectural expression underlies all formalistic, abstract-figur-

al, pure-visibility, and physio-psychological interpretations. The theory of proportions finds a precedent in Pythagorean thought and in the Vitruvian terms *ordinatio*, *dispositio*, *eurythmia*, *symmetria*, *decor*, *distributio*. These were developed by the theorists of the Renaissance, particularly by Alberti and Luca Pacioli, and have been rationalized in modern times by Zeising, Thiersch, Ghyka, and Hambidge. Michelangelo defined the Vitruvian attributes of architecture in this way: "Architecture is nothing but order, disposition, beautiful appearance, the proportion of parts to one another, suitability, and distribution."

Vincenzo Scamozzi initiated the academic search for rules: "Architecture makes use in the abstract of number, form, size, and material by means of speculation; it also uses proportion and relation in the same way as the mathematicians." Francesco Maria Zanotti: "What else does the architect do but turn over in his own mind the immense variety of infinite proportions, searching with his soul through all the forms of beauty and attractiveness in order that all his study will make his own work conform to what he judges to be perfect?" J. J. Winckelmann: "In architecture beauty consists primarily in proportion. A building can be beautiful by proportion alone, without any ornament." Girolamo Francesco Cristiani: "The consonances of music create pleasure and harmony when the ear is able to understand and hold all at once their commensurability by means of the frequent coincidence of the vibrations of the chords, whether tremulo or sonorous. The beautiful proportions of architecture are the same." Carlo Lodoli: "Architecture is an intellectual science and practice designed to establish by means of the intellect the proper use and proportions of the products of the art." Leopoldo Cicognara: "It cannot be doubted that the absolute beauty derived from architecture consists in the general harmonies and in the proportions of the parts." Pietro Selvatico: "Architecture is commonly defined as the art of building according to the proportions and rules fixed by nature and taste."

In Kerr's view architecture is the operation of laws that are primarily mathematical and completely scientific: "Architectural art is the dress of scientific structure." For J. L. Ball, architecture is "a mathematical art operating solely by the medium of proportion." According to Louis Hauteœur, proportion redeems architecture from reliance on material: "Of all the arts architecture is most subservient to material, economic, and social conditions; it is also the one which, thanks to mathematical proportions and geometric forms, expresses the most abstract speculations of the human mind." Heinrich Wessling: "Architecture is based on geometry and not on the feelings of the individual... The task of architecture is the application of geometric figures and their harmony to the form and size of the building. Architectural style is the form deriving from the composition of geometric figures."

Among contemporary scholars Rudolf Wittkower is perhaps most strongly drawn to the mathematical and geometric interpretation of architecture, but others have also been interested in this approach. Work has been done on the relation of simple numbers in the triangles of the pyramids and in Egyptian construction in general; Pythagorean theories and the proportional relations of the acropolises and temples of Greece, so splendidly begun by Choisy; on the geometric substratum of the plans and sections of Gothic cathedrals, already indicated in the notebooks of Villard de Honnecourt and analyzed by Viollet-le-Duc, Hoffstadt, Lund, and Schmarsow; on proportional systems related to the perspective of the Renaissance, investigated by numerous students but primarily by Panofsky, White, and Francastel; on the influence of integral calculus and descriptive geometry on baroque architecture and particularly on such artists as Guarini; and, finally, on the relation of relativism in physics and modern architecture.

The desire to synthesize architectural composition into a group of mathematical or geometric laws, amply illustrated here (figs. 679, 681), is in harmony with the programs of the abstract movements of the 20th century and has taken life from them. Somewhat related to this taste is the recent attempt of Bragdon and Jouven to establish a mechanical analogy between music and architecture by transcribing on a pentagram

the rhythms of architectural monuments in octaves, fifths, and thirds.

The physiopsychological-sympathy interpretation, or *Einfühlung*, has a precedent in the embryonic anthropomorphism of the Greeks and Vitruvius, in the treatises of Le Camus de Mezières and Girolamo Masini, and, in part at least, in the thought of Schopenhauer, Frobenius, and Spengler. Proponents of this view look for the rules of architecture in the physical or psychological effect produced by the "weakness" or the "strength" of a line, by the "flexibility" or "contraction" of a space, by the "weight" or "buoyancy" of a volume. *Einfühlung* was applied by Vischer, Volkelt, and Lipps, but especially by Wölfflin. The latter's studies (*Prolegomena zu einer Psychologie der Architektur*, 1886; *Renaissance und Barock*, 1888) have profoundly influenced architectural criticism, particularly since his physiopsychological criteria were connected with psychoanalytical studies of art. Finally, Fiedler's theories of pure visibility have been widely accepted and have had a decisive effect in freeing architectural historians from the traditional "mode of seeing."

Even this schematic summary of definitions may seem to justify Camillo Boito's observation that "among all the arts of design, architecture is the most boring to hear about . . ." Those who have attempted to trace the history of the concept of architecture — and it is enough to cite *Les théories de l'architecture* of M. Borisavliévitch in 1926 and *The Romantic Theories of Architecture of the Nineteenth Century in Germany, England and France* by Roland Bradbury in 1934 — have produced weighty and tedious tomes enlivened only by a few digressions on particular monuments. The result could not have been otherwise, for a theory of architecture developed from experience and from history must inevitably fall into generalities. "Architecture reflects the life of a society," it has been said, but do the other arts fail to reflect it? "Architecture is connected with a certain function and a technique"; is this not true as well of the theater, literature, and painting? "The language of architecture is based on proportion," but can anyone deny that, within certain limits, the composition of a painting or of a statue involves similar concerns?

Even though these definitions cast some light on certain facets of architecture, they do not characterize architecture entirely. They do not even help to clarify the widely adopted or assumed distinction between building and architecture, between a constructional activity concerned solely with functional or practical ends and a creative activity based on artistic intent. This is an acceptable distinction, for it merely transposes to architecture the categories of prose and poetry long familiar in literary criticism. It is, however, frequently taken in the sense of content. "A wood hut has as much to do with architecture as the cry of a baby has to do with music." In the introduction to his excellent volume *An Outline of European Architecture* (1943), Nikolaus Pevsner asserted: "A bicycle shed is a building; Lincoln Cathedral is a piece of architecture . . . The term architecture applies only to buildings designed with a view to aesthetic appeal" — as if it were impossible to conceive a utilitarian structure artistically.

The fundamental inadequacy of the definitions above lies in their failure to come to grips with the basic problem: to explain the differences between architecture and the other arts in concrete, phenomenological terms; to show how the prose and poetic works of architecture meet and then separate through differences in creative capacity; in other words, to describe the essential nature of the architectural process and thus to indicate exactly what may be classified as architecture.

To meet these demands, a definition has been slowly developing that takes into account content, technique, and form. Its genesis and its implications merit a more thorough examination.

The spatial concept. In essence the spatial definition, like the others, has its roots in the old treatises. The concept of *utilitas* in architecture — of practical function and "habitability" — is already present in the works of Plato, Aristotle, and Vitruvius, and in the notebooks of Villard de Honnecourt in the 13th century. It appears quite strongly during the Renaissance with Alberti, Vasari, Serlio, and Palladio and indicates

precisely the specific architectural function of creating an environment, of enclosing a space adapted to the life of man. The concept of the "organism," already found in the *Hypnerotomachia* and Filarete's treatise and clearly expressed in the studies of Francesco di Giorgio, the theories of Leonardo, and the brilliant intuitions of Michelangelo, stresses the complexity of architecture and proposes perspective and proportion as a means of unification. Similarly, the insistence on *firmitas* and on techniques of construction, which were the constant preoccupation of theorists enraptured by the bold structures of the Roman or Gothic masters, arose from an awareness that the architect's first task is to construct a refuge, to cover a void, to isolate a proportioned space from the vast space of nature by means of a statically valid system.

The concept of space as the distinctive factor in architecture or as the nexus by which a structure is made to conform to its use is implicit in the thought of Kant and Hegel, in Schopenhauer's theories of structural dynamism, and in the sociological and environmental meditations of Taine. It is explicit in the writings of Oriental philosophers, particularly in Lao-tzu. During the 19th century the phenomenon of space was studied with increasing enthusiasm by ethnologists, historians, art critics, and philosophers. Spengler placed the "feeling for space" at the generative center of every culture; Worringer, contesting the validity of Kant's a priori space, maintained that it is variable and relative; Alois Riegl became the first art historian to consider space as a factor determining style ("From the very beginning of human civilization has not the aim of any architecture whatsoever that rises above the level of pure sign, been the formation of space?"); and Frobenius elaborated a morphological theory of spatial intuition in a group of "spatial symbols" characteristic of various cultures: "the isolated body" for antiquity, the "infinitely three-dimensional" for the Western world, "the cave-vault" for the Arab world, "the labyrinthine road" for the Egyptians, "the road in nature" for Chinese culture, and the "infinite plane" for Russia.

Among later theorists August Schmarsow, A. E. Brinckmann, and H. Soergel have supported the concept of architecture as *Raumgestaltung*, conformation of space. This orientation has been further strengthened by the contributions of such critics as Geoffrey Scott and by the theories and artistic works of leading modern architects. A few selections from the imposing list of observations and studies on architectural space may well be in order.

In 1914, Geoffrey Scott stated: "Architecture gives us spaces of three dimensions in which we stand. And here is the very center of architectural art . . . Architecture alone of the Arts can give space its full value. It can surround us with a void of three dimensions; and whatever delight may be derived from that is the gift of architecture alone . . . The habits of our mind are fixed on matter. We talk of what occupies our tools and arrests our eyes. Matter is fashioned; space comes. Space is 'nothing' — a mere negation of the solid. And thus we come to overlook it. But though we may overlook it, space affects us and can control our spirit; and a large part of the pleasure we obtain from architecture . . . springs in reality from space . . . The architect models in space as a sculptor in clay. He designs his space as a work of art; that is, he attempts through its means to excite a certain mood in those who enter it . . . None the less, in the beauty of every building, space-value, addressing itself to our sense of movement, will play a principal part."

Brinckmann, in 1915, added: "Architecture forms spaces and plastic masses. Space, in contrast to plasticity, encounters its limitations where it strikes against the plastic masses; it is defined from the interior. The limits of plasticity, however, are in the space of the air that surrounds it; it is defined from the exterior . . . These two elements have in common volume and corporeality . . . Hence it is possible to speak of a spatial body or of a plastic body. The relation of space and plasticity in architecture rests on these common elements. Space and plasticity can model each other reciprocally. Spatial vision . . . like plastic vision, rests on the representation of movement. On the horizontal plane the eye encompasses the plan of a

locale; then it rises through the vertical along the walls up to the ceiling, where it descends again. These enclosing lines can rarely be comprehended from a single point of view, but taken together in the mind, they create the representation of space One must remember that a new plastic creation does not require an architectural change unless it is accompanied by a new spatial creation. The principal aim of architecture is the creation of space."

In 1918, A. Hildebrand, who tended to reduce every spatial experience to the visual image, wrote: "Our relation to space finds its direct expression in architecture in so far as architecture awakens in us a precise feeling of space, instead of merely suggesting the possibility of movement in space, and in so far as it articulates a space in such a way that the visual image is substituted for the labor of orientation required in nature."

Frank Lloyd Wright probably made the most pregnant statement for modern architects (1928): "The building is no longer a block of building material dealt with artistically from the outside, a form of sculpture. The room within, the space to be lived in, is the great fact about the building; this room should be expressed on the exterior as space enclosed."

In 1934, Henri Focillon expressed a precise opinion: "In essence and by destination, the art of architecture exerts itself in a 'true' space, one in which we walk and which the activity of our bodies occupies A building is not a collection of surfaces, but an assemblage of parts, in which length, width, and depth agree with one another in a certain fashion, and constitute an entirely new solid that comprises an internal volume and an external mass. A ground-plan can, to be sure, tell us a great deal . . . but this kind of reduction, or, perhaps, abbreviation of the processes of work, by no means embraces the whole of architecture. Indeed it despoils architecture of its fundamental privilege: namely, the mastery of a complete space, not only as a mass, but as a model imposing a new value upon the three dimensions It must not be forgotten that mass offers the double and simultaneous aspect of internal mass and external mass, and that the relation of one to the other is a matter of peculiar interest to the study of form in space. Each of these two aspects may, of course, be a function of the other, and cases exist in which the composition of the exterior immediately apprises us of the interior arrangement. But this rule is not invariable The profound originality of architecture as such resides perhaps in the internal mass. In lending definite form to that absolutely empty space, architecture truly creates its own universe. The unique privilege of architecture among all the arts, be it concerned with dwellings, churches, or ships, is not that of surrounding and, as it were, guaranteeing a convenient void, but of constructing an interior world that measures space and light according to the laws of a geometrical, mechanical, and optical theory which is necessarily implicit in the natural order, but to which nature itself contributes nothing."

F. Stelê (1943): "Architecture is composed of three things: the material shell, the space it contains, and the essential aim. Of these three only space is constant and only on it can a serious study of architecture rest." M. H. Thomas (1947): "Though an architect's experience in handling three-dimensional form makes him a useful member of a team to design anything from a city down to a tea-cup, architecture itself is the application of form to a particular purpose — the enclosure of space The first way to look at a building, whether one is inside it or outside, is to see what manner of enclosure it makes — to get the feeling of it not as a grouping of masses, like a mountain or a monument, but as the combination of hollow shells of various contours."

In 1949, Joseph Hudnut asserted that "space" is the almost exclusive possession of architecture, and E. W. Rannells added, "The enduring value of architecture is space Architecture must be seen and felt and understood from the inside out The progress of architecture through the ages is to be traced in the expressive development of the inner volumes rather than of the outer forms that contain them or, what is worse, merely stand before them as added monumental façades."

A. I. T. Chang (1956): "Unlike other visual arts, architecture is an art of life itself expressed in lifesize scale . . . it is the language that has the emotional power to express with authority the structural meaning of a functional space." E. J. Posener: "The ability to handle space establishes more than a superficial difference between architecture and the sister arts The effect of architecture on the senses seems to be more immediate Before a painting or a piece of sculpture, an act of approach is required: the spectator must establish contact; but the influence of a room is inescapable. Here, it is the room that establishes contact with the visitor."

The orientation indicated by these passages represents the consensus of modern architects, aided by the thought of such artist-critics as Laszlo Moholy-Nagy, U. Boccioni, and Theo van Doesburg and by the direct or qualified acceptance of philosophers and sociologists. It has been illuminated in particular by the historical contributions of such modern critics as Argan, Wittkower, Pevsner, Bettini, R. Pane, F. Gutheim, A. Drexler, C. L. Ragghianti, J. M. Richards, and P. Francastel. Architecture, then, is the art of space formation, of enclosed voids, of the dynamic sequence of many-dimensional concavities containing many points of view. In both a physical and a symbolic sense, it expresses the life of mankind and the creative vitality of the architect. The experience of internal space is a phenomenon peculiar to architecture; it defines the social content, the instruments of technique, and every expressive value from prose to poetry, from the ugly to the beautiful. Hence interior space is the place where all manifestations of architecture are applied and qualified.

The definition "architecture — the art of space," which emerged during the 19th century, is vague enough to permit several interpretations. The very existence of a plurality of spaces makes it necessary to define architectural space analytically. We may distinguish between the modern and the traditional concepts by examining the following problems:

a. *The art of space, the art of time, space and time.* The modern concept of architectural space clearly has nothing in common with the old-fashioned classification of the arts as spatial and temporal, in which architecture would be a static and immutable art and music, for example, would exist in time. Architectural space is neither fixed nor rigid; it is the space-time that is experienced in the dynamic reading of architectonic sequences. Anyone who understands it as pure extension, materiality, or immovable reality is basing his belief on a traditional notion or a metaphysical category of knowledge that has been proved inconsistent in science and philosophy.

The processes of visual and motor perception investigated respectively by Hildebrand and Schmarsow are essential to an understanding of architectural space, which can be experienced and comprehended only in a sequence of time, by means of movement. For this reason no graphic reproduction and no photograph can take the place of spatial experience. Even a cinematic representation presents only one of the infinite successions through which a space is known. The dilating or contracting rhythms, the closed or articulated, simple or elaborate, basic or complex and imprecise nature of a void, and even more of an ensemble of spaces, are the major concern of architectural invention and can be grasped only by "reading" a building thoughtfully from innumerable points of view, only by traveling through it many times. Volkelt wrote, in 1876: "The configuration of space is explained by movement. In order to understand it esthetically we must participate in this feeling of movement." The reference here is to the figural arts in general, but architectural space requires that the observer actually move through it before he can develop the "feeling of movement" capable of explaining its configuration.

In his book *Art as Experience* (1934) John Dewey makes this point more clearly and more precisely: "Architectural structures provide, I should imagine, the perfect 'reductio ad absurdum' of the separation of space and time in works of art. If anything exists in the mode of 'space-occupancy,' it is a building. But even a small hut cannot be matter of esthetic perception save as temporal qualities enter in The hasty

sightseer no more has an esthetic vision of St. Sophia or of the cathedral of Rouen than the motorist travelling at 60 miles an hour 'sees' the flitting landscape. One must move around, inside and outside through many visits and allow the structure to present itself gradually under different lights and in connection with many different moods."

The idea of "reading" a building as one reads Milton or Dante and of drawing from the succession of environments the same pleasure that one derives from the continuity of strophes and cantos was only slowly accepted; a static quality had been attributed to architecture for centuries, and so deeply rooted a preconception is not easily destroyed. It should also be pointed out that the education required to read a building is perhaps more complex than that required to understand a poem or a novel. The "verses, sentences, and phrases" of spatial voids are not ordered in one fashion by the author but must be recomposed by the observer in numerous — in fact, infinite — sequences (PLS. 377-379).

In constructing a space, an architect foresees and maps out every itinerary. He accentuates the value of one reading and diminishes the importance of another. He may consciously reduce one space to a void or negation, but the whole is impregnated with his personality. If a building has been conceived for one reading, or worse if it requires no reading at all but can be exhausted by a static vision, then it is at best the product of a designer of stage perspectives, not the work of an architect.

b. Space in the visual arts and architectural space. The assumption that painting is concerned with two dimensions, sculpture with three, but only in a plastic sense, and architecture with three in a spatial sense is truly an oversimplification. Both painting and sculpture involve the third spatial dimension — as well as the fourth, time, through which the three perspective dimensions are perceived in succession. In this sense criticism is correct in refusing to attribute space to architecture alone, for space is a universal artistic category. The difference between space in architecture and space in the other visual arts does not concern an a priori principle that can be defined as a mathematical structure of coordinates or as a new geometric structure; neither does it imply a qualification of the architectural work itself, which was attempted in the limitations of the traditional *Raumgestaltung*. The difference, rather, inheres in the act of creating, experiencing, or contemplating a building in its setting.

Painting evokes the four dimensions by representing them on a surface; the observer recreates the process by experiencing "with his feelings" a sense of depth and movement. Sculpture not only represents the four dimensions in its planes and volumes but leads the observer to move whenever its true "reading" requires many points of view. An understanding of the structural shell or mural cage that encloses an environment comes from experiences rather similar to those in sculpture. The difference here is intrinsic and is primarily concerned with scale, with the relation of man to the plastic object. Interior space is essentially unique in architecture; its concavities and voids do not lie within the framework of the four dimensions of painting and sculpture and hence cannot be defined in representational terms. With architecture man is not constrained to look at the exterior of an object and to penetrate its interiors only through his imagination; he is immersed in it, absorbed into a cosmos characterized by infinite multiplicity, by rhythms acting in time.

The space of the architect derives from an experience that cannot be shared by the painter or sculptor. This is demonstrated by the fact that the characteristics of painting or sculpture cannot be carried over to architecture, or vice versa, without undergoing a radical transposition. The space created by Alberti and Brunelleschi during the early Renaissance had no effect on the pictorial or plastic art of the church for decades; there is nothing comparable to impressionism in architecture; the dynamic plasticism of Boccioni and the futurists was not reflected in architecture; Wright's organic poetry has not yet been translated into painting or sculpture.

The step from representational "spatiality" to architectural space is, therefore, anything but mechanical.

It is true, of course, that the various arts have a similar vocabulary and that the clear affinities between Brunelleschi and Donatello, for example, or between Borromini and Caravaggio, Aalto and Moore, Mies van der Rohe and Paul Klee may be useful in demonstrating the unity of an art culture (PLS. 380, 381). To establish an identity between the phenomenologies of the arts, however, one would have to accept only the superficial traits they have in common and to reject any attempt to probe deeply into the specific processes of construction and comprehension that belong exclusively to architecture. The dimensions of length, width, and depth, together with the time characteristic of "cubic" images, are as characteristic of a painting or a statue as they are of a building, but they define only single events in architecture, those seen from a particular point of view. They comprise neither the totality of the experience nor its uniqueness.

The weakness of most pure-visibility criticisms lies in this willingness to "excuse" architecture from the demands of its physical context. As a result, an environment or a building becomes a series of fixed pictures that can be judged in the same way as any other work of art. If this view were accepted, the history of architecture would become the history of architectural photography; a real building would be equivalent to a painted building. The refusal to characterize interior space obscures the specific reality and distinction of architecture.

c. Artistic space and physical space. The primary index of the differences among the "virtual" space of painting, the closed and impenetrable "convex cube" of sculpture, and the "void and concave cube" of architecture has been repeatedly alleged to lie in material. As indicated above, however, the definition "architecture — the art of space" is open to several misinterpretations that can quite easily alter its meaning. On the one hand architectural space is sometimes confused with artistic space; this is the metaphysical view, which extends the significance of architectural space but denies it any attributes that would differentiate it from the space of other arts. On the other hand, there is the broad, naturalistic interpretation, which reduces space to a measurable physical property.

To counter the first misconception, one need only recount the facts of experience. Whenever man is placed within an enclosed space, whether in a natural cave like the interior of St. Front in Perigueux or under a bicycle shed or in the Cathedral of Amiens, he experiences something other than he would in viewing a painting or a statue. This experience is exclusively architectural; there is no architecture without it. It must be added, however, that the data of experience cannot be transferred to the field of expressive values by attributing purely physical and dimensional characteristics to architectural space. Physical space bears the same relation to architecture as the canvas does to painting, the block to sculpture, a sheet of paper and a word list to poetry. Anyone who feels esthetic sensations in a natural cave or grotto is much like the person who feels "pictorial" emotions at the sight of a beautiful sunset or who feels "plastic" sensations on looking at a stone, a crystal, or a range of mountains. Such a person may be incapable of distinguishing between the beauty of nature and that of artistic creation (PLS. 382, 383). Nonetheless, the theorists of the 17th and 18th centuries were so preoccupied with bringing architecture, painting, and sculpture together that they defined architecture as an "imitative art." Here there is clearly a confusion between natural and architectural space.

Federigo Zuccaro wrote, in 1607: "Architecture... too has imitation as its aim. This it attains by ordering different sorts of structures to the use and requirements of man. This world was created as the earthly dwelling of man and the animals. Nature created caves and grottoes, ponds, woods, and lakes for the wild beasts; she also creates in a different manner other grottoes, other caves, and other woods, ponds, and delightful and pleasant artificial lakes for this sociable animal in order to give greater comfort to man and to embellish this world at the same time. [Here there is the same relation between

physical and architectural space as there is between the animals and man.] As man surpasses all the other earthly creatures and animals, so the structures she builds for man surpass by far the caves and dwellings of the brute beasts."

In 1750, Francesco Maria Zanotti denied the relation between architecture and nature by arguing that if architecture must imitate something, it is better to imitate God than to imitate His works: "Even though architecture does not imitate any product of nature in the way it forms and decorates its palaces and temples, it still attempts to follow certain rules. In doing this it imitates in a certain way the perfect model which cannot be seen with the eyes of the body, but only with the eyes of the soul. I shall freely admit that architecture does not imitate nature, if you will concede this, which is so much greater: it imitates an object far superior to itself — the one imitated by God himself." He concluded, in a Platonic vein, that architecture is superior to painting and sculpture, because, unlike these arts, it does not imitate nature, but "the Ideas that are comprehended only with the soul."

In a definition of 1768, Francesco Milizia apparently identified architectural reality with natural reality: "Architecture can be called the twin of agriculture. Along with hunger, which led man to agriculture, goes the need for shelter, which gave him architecture . . . Architecture is an art of imitation . . . True, it does lack a model formed by nature, but it has another formed by man when he followed his natural industry and constructed his first dwelling." Here Milizia was already alluding to a difference between natural environments and space created by man, though on a primitive level. In 1781, however, he again took up the analogy between natural caves and architecture: "If civil architecture wishes to be admitted because of her beauty to the Fine Arts, she must prove that, like the others, she descends from some natural model that she proposes to embellish while imitating. Caves, grottoes, caverns are the buildings that Mother Nature presented to man, her favorite son." The problem of architecture, Milizia quickly added, "requires that we decide whether the rustic model of a hut provides a basis for deducing a good system of imitation for the beauty in buildings." Here the inspiration of nature is already conditioned by the artistic stimulus it can furnish.

Finally, in 1795, Gian Battista Vinci formulated a completely positivist definition of the genesis of forms: "Since architecture is nothing but an imitation of the original rude hut, it is impossible to find any basis outside this imitation for the architects' decision to use various ornaments in their buildings. Trees suggested columns. The branches . . . inspired the capital. A plank of wood stretched horizontally between two trunks gave the idea of the architrave. The beams that support the ceiling suggested the frieze. The roof that protects the structure from the rain is expressed in the cornice. Finally, the pitch of the roof taught man how to form the pediment." He conceded, however, that "every architect has the right to depart from the established rules when this would aid him tremendously in providing that degree of expression which he intends for his work."

There is no theorist, then, not even an adherent of the most arid biological or mechanistic theories, who does not understand that architecture begins when the extrinsic architectural program is finished; that is, when the object, in this case the physical space, becomes image and the social content of the structure is transmitted by a personal interpretation. The distinction between building and architecture, between architectural prose and poetry, can be reduced to the distinction between architectural space and physical space. Both building and architecture provide the experience of physical voids and exist for them, but although building does not go beyond the material representation of space, architecture molds and changes it, expands and compresses it, loads it with tensions or rarefies it, makes it monolithically continuous or breaks it, qualifies it by light into infinite images that can express grotesque brutality as in a magic atmosphere. The architect models and attacks his concavities in the same way that the sculptor uses his marble or clay. The architect, however, employs the unique procedure of molding them from the interior, always taking

into account the infinite number of directions the observer must recreate in order to read the work completely.

Hence the assumption that architectural space is equivalent to the general space of all the arts serves no critical purpose and, on the idealistic level, tends to negate the very existence of architecture, to equate it with its physical nature, and thus to consider only its crudest aspects. Architectural space is neither physical nor transcendental; it is simply the point of application, the preeminent object, the place where reality takes form, the image of architecture. Whether it becomes prose or poetry, pure lyric or expressive negation, depends entirely on the architect (PLS. 384-387).

d. Category and personality in space. The fundamental difference between the traditional theories of space — particularly the *Raumgestaltung* of Schmarsow, Soergel, and Adler — and the modern interpretation inheres in the relation between the categorical "concept" of space and the personality of the artist. In the olden view space was generally considered an objective fact, an attribute of three-dimensionality, whether cubic or concave, and a constant law, demonstrable in a rigid concatenation between form and effect, which is manifested either in contrast to, or in harmony with, creative liberty. Exponents of this position clearly indicated the separation between natural and artistic space, between physiological data and the spiritual product, but they classified artistic space statically, as a final category of "figurality" dominated by abstruse optical, dimensional, and psychological norms. Berenson said of Schmarsow and his followers that "the art writing of the German-minded has been more and more dedicated to discussing space determination, space filling, space distortion, space this, space that . . . This preoccupation has led to a cult of space in the abstract, and to fantastic interpretations . . . The trouble with the German-minded is they never seem to take art as an experience."

It is clear, then, that architecture, and the space that qualifies it, has been subjected to every conceivable sort of esthetic and critical theorizing — positivistic, idealistic, technicistic, symbolic, conceptual, and transcendental. Thus, for example, it is possible to classify architectural space by applying the Wölfflinian laws governing the transition from linear to pictorial vision, from surface to depth, from closed to open form, from absolute to relative clarity. Though such studies are frequently stimulating and intellectually subtle, the results are often interpreted, within the framework of antiquated metaphysical and naturalistic theories of art, as suprahistorical facts governed by the dogmas of proportion, symmetry, rhythm, and the golden section — in general, by the dogma of "styles" and their evolution. Another disadvantage is that critical techniques developed in painting and sculpture have been imposed on architecture. Contemporary thought, therefore, can do nothing but reject the thesis of *Raumgestaltung*, even though it must recognize its important contribution — the treatment of space as the mode of architectural expression.

The definition "architecture — art of space" has finally been qualified and explained within the framework of a rigorous historical vision. In this view not only does each culture have its own space, but each architect, in every truly artistic work, creates an original and unique space. Architectural history is no longer concerned with abstract spatial "conceptions" but with the creative personality of spaces. In contrast to *Raumgestaltung* and its many derivatives, the modern view frees architectural space both from mechanistic bonds and from the mythical, timeless, and symbolic attributes that would relate it to aspirations for a changeless and incorruptible eternity. It takes on instead a much larger significance as a phenomenon; it comprises and interprets social content and technical factors in architecture and expresses them in artistic values commensurate with the genius of the architect.

e. The space of the façade and of volumes. A rather surprising, but often reiterated, objection to the modern spatial interpretation of architecture is based on the observation that space is concerned not only with architectural concavities but

also with façades and particularly with volumes. However, to put it paradoxically, there is a spatial "interiorness" even in architectural exteriors (PLS. 388, 389). It would indeed be strange if such were not the case, if façades were not considered as bas-reliefs pressing against the atmosphere, depth, and time. Only in its broadest sense can we accept Pevaner's view: "Aesthetic sensations may be caused by a building in three different ways. First, they may be produced by the treatment of walls, proportions of windows, the relation of wall-space to window-space, of one story to another, of ornamentation such as the tracery of a 14th-century window, or the leaf and fruit garlands of a Wren porch. Secondly, the treatment of the exterior of a building as a whole is aesthetically significant, its contrasts of block against block, the effect of a pitched or a flat roof or a dome, the rhythm of projections and recessions. Thirdly, there is the effect on our senses of the treatment of the interior, the sequence of rooms, the widening out of a nave at the crossing, the stately movement of a baroque staircase. The first of these ways is two-dimensional; it is the painter's way. The second is three-dimensional, and as it treats the building as a volume, as a plastic unit, it is the sculptor's way. The third is three-dimensional too, but it concerns space; it is the architect's own way more than the others." Leaving aside the question of dimensions, which we have already discussed, it is clear that such a distinction can be useful only for didactic ends. In reality, spatial images take form not only in the voids but in the volumes and planes.

In examining the façade of the Pazzi Chapel in Florence, G. C. Argan made the following observation: "In so far as the members and divisions of that façade depend on a rigorous projection of the interior spaces onto the plane, the surface expresses the interior space and repeats its value. In fact, it is not a surface but a plane, if we define plane . . . as the 'cross section' of the visual pyramid, or the area on which its depth is made measurable 'by comparison,' consisting in 'proportions,' exclusive of any emotional or allusive effects . . . It would seem, then, that the problem should be rephrased by recognizing interior space as a communication or a reciprocity between what is inside and what is outside the mural cage, that is, the formal value created by the concept of the architectural image as something that exists in reality and modifies it . . . The space of Brunelleschi or of Borromini is an interior space even if it exists as a wall or an almost purely graphic spiral on the lantern of a cupola."

In investigating early Renaissance attempts to give perspective depth to the façade, C. Brandi reasoned in a similar manner: "We must recognize the difficulties that brought them [Renaissance architects] to a halt before the façade. They did not want it to seem a rude obstacle, a lowered portcullis that would cut in two the harmony and spatial geometry of the church. It was necessary that the exterior be treated like the interior, not that the interior be indicated on the exterior with all its subdivisions, bearing members, and so forth, as happened in a broad sense in the Romanesque and Gothic periods. The problem was to render the exterior with the same concern for space as the interior, that is, to make it immune from space-environment, undamaged by it, matrix of its own space, in which, it should be noted, it became its own interior."

Brandi clearly distinguished between the expression of architecture and that of the other visual arts when he wrote: "One does not enter a painting like Alice through the looking glass; one does not fall in love with a statue, at least if one wishes to avoid the fate of Pygmalion. But one enters and leaves a temple in the same way as a grotto. The possibility of living coexistence with the statue or painting is limited by the point of physical contact, where the work of art disappears and becomes merely an object of touch, a material, a sensation of rough or smooth, warm or cold. In architecture, however, we are not only permitted to enter and exit but required to do so; thus it is no longer possible to accord architectural dignity to a simple perspective or a solid block, to a polished exterior that has no interior. Stage design, therefore, is not architecture, and the obelisk and the pyramid oscillate between architecture and sculpture." But Brandi then went on to

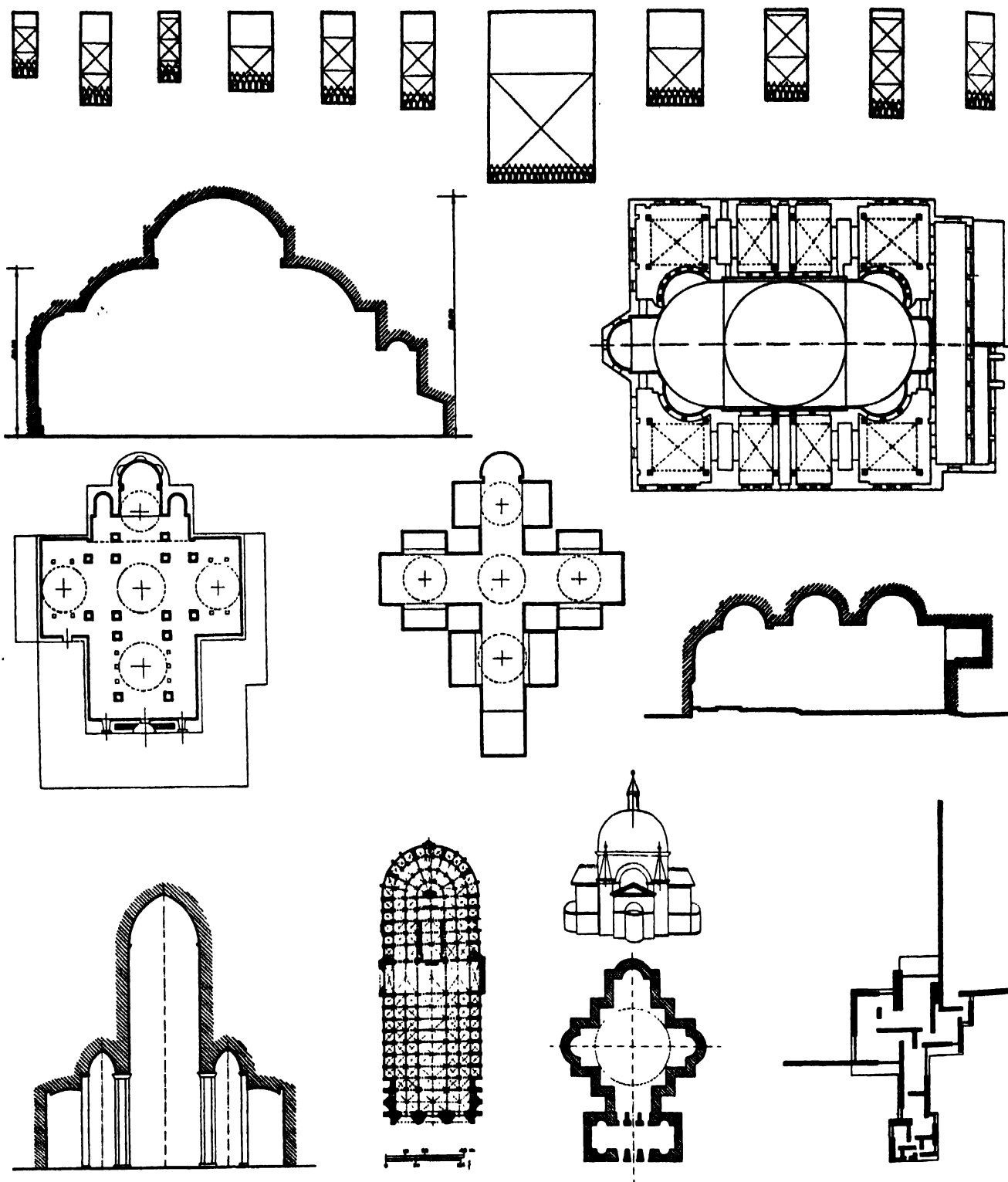
comment: "This observation is so clearly empirical that we must necessarily advance beyond it. . . . In order that the within and the without may arise in the structure of the architectural image from the realistic conditions of the work, they must become a necessary and ineluctable requirement. This must occur in such a way that in all its phases the form of the architecture shall be at the same time exterior and interior in itself; one should not be able to penetrate the form, but it should be understood as self-penetrating. It cannot be expressed in any other way."

One must have certain reservations about Hildebrand's and Brandi's tendency to reject the specific qualities of architectural space and to bring it back to the general category of space in the visual arts. Their position has been stated as follows: "The impenetrability of pictorial or sculptural space is only temporarily reducible to the level of experience, to the distance imposed by vision. This distance does nothing but register on a physical level the absolute formal requirement of separating pure reality from existential reality." It is clear, however, that the three- and four-dimensional characteristics of painting and sculpture are also operative in the façades and volumes of architecture outside the limits of the 15th century.

Even though Pevaner's approach, indicated above, is unacceptable from the point of view of theory, it still has significant implications: anyone acquainted with painting and sculpture can easily recognize the architectural box through its decoration, its surfaces and planes, and the stereometric effects, but he cannot so easily recognize the interior space of architecture. A student of medieval art could read the façade of a 13th-century cathedral as he would an abstract painting or relief. Here he would rediscover all the figural themes of the painting and sculpture of the period, the same two- and three-dimensional values, the same temporal, chromatic, plastic, perspectival, proportional, luministic, and atmospheric values. By analyzing the façades and the volumes in every way — in various lights and from various vantage points, from the very high to the very low — he could quite easily translate the whole gamut of real and "virtual" spaces into an understanding of architecture — assuming, of course, that he had a mature sensibility based on long experience with painting and sculpture. The comprehension of architectural concavities, however, demands a different and much more complex education. Anyone who learns to see and to read them can formulate exact and often illuminating opinions on architecture, for the creative architect expresses himself in the manipulation of voids as well as in volumes, surfaces, and the line of a molding; however, even such a critic cannot expect to understand the secret wellsprings of architecture.

f. Identity between interior and exterior space. The term "city planning" connotes the economic programming of a territory; the schematic division into industrial and residential areas, directional centers, parks, and so on; and the planar-volumetric and spatial construction of the city. Architecture can be considered in similar phases: the economic program of the building, the hygienic regulation of its masses and environment, and the actual construction. It is quite clear that in city planning, as in architecture, the first two stages pertain only to intentions. They are often important for the genesis of the final result but abstract and hypothetical without that result. Only the third phase provides the historical object.

The distinction between the "interior" space of architecture and the "exterior" space of city planning is justifiable only on a provisory didactic level. A street or a square may be external in respect to the buildings that surround it; still it is internal in respect to the city. Buildings either divide or contain directional forces in the flowing spaces of a city, just as walls and furniture do in an enclosed and articulated space. The same method is used to characterize a street or square as to define a hall, gallery, portico, or palace court (PLS. 390, 391). The radiating, orthogonal, or stellar systems of city planning characteristic of various historical periods were reflected in the architecture of their time. The spatial narrative of medieval buildings is comparable to the agglomerations of buildings in Siena, Perugia, Aversa, Montagnana, and Carcassonne.



Historical development of the concept of space as shown by architectural analysis. *Upper row:* Schematic sections of the cellae of Greek temples in Sicily and southern Italy in relation to human proportions. *Left to right:* Selinous (Selinunte), Temple A; Syracuse, Temple of Athena; Agrigento, Temple of Concord; Selinous, Temple D; Paestum, the so-called "Temple of Poseidon"; Segesta, Temple; Selinous, Temples G, F, C, E; Agrigento, the so-called "Temple of Herakles" (Courtesy of Istituto Universitario d'Architettura, Venice). *Second row:* Spatial extension in Byzantium. *Left to right:* Istanbul, St. Sophia, section and plan. *Third row, left to right:* Venice, S. Marco, plans and section. *Fourth row:* Contrasts of dimensions and spatial continuity in the Gothic period. *Left two:* Beauvais, Cathedral, section, and Paris, Notre-Dame, plan (from B. Fletcher, *A History of Architecture*, 15th ed., 1950). *Center, right:* Renaissance concept of volume. Mantua, S. Sebastiano (after A. Pica). *Right:* Fragmentation of architectural volume (space divided by planes that do not form closed units). Mies van der Rohe, project for a house, plan.

The dimensional contrasts of Gothic monuments are in complete harmony with Clermont-Ferrand, Chartres, and Mont-Saint-Michel. The centric and proportional ideals of the Renaissance are represented by the city plans of Filarete, Francesco di Giorgio, Serlio, and Leonardo; by particular sites such as the Piazza of SS. Annunziata in Florence, the Piazza Grande of Vigevano, and Ercole d'Este's additions to Ferrara; and by the posthumous cities of Palmanova and Gramscio. The crisis of the Renaissance module observable in Michelangelo at the Laurentian Library is followed by the overturning of that module on the Capitoline hill. The focal bipolarity and formal interpretations of Borromini and Neumann are echoed in the breakdown of self-sufficient perspective paintings, the plurality of radial or coordinating centers, and the acceleration of urban developments in the 17th and 18th centuries — from St. Peter's Square to the Piazza of S. Ignazio in Rome, from the dispersion of streets in Lecce to the powerful crescents of Bath. The analogy between building and city is also confirmed by the utilization of space: the bedrooms correspond to the residential areas; the sun porch to the recreational areas; the study to the schools and universities; the kitchen and pantry to the markets and industrial zones; and the corridors to the streets. The city, however, is on such a scale that one cannot understand its spatial significance without special preparation. It is quite difficult for the layman viewing the colonnades of a Greek temple or a portico by Brunelleschi to read not only the solids but the two-dimensional or perspective values of the voids between them. If long training is required to understand architectural concavities, it is even more difficult to comprehend the many related effects of urban spaces. For this reason there has been, historically, even less feeling for the city than for architecture, and the history of the city as an artistic product is unsatisfactory and methodologically retarded. The problems of understanding poetic, literary, and prosaic values, recognizing the superposition of divergent and contrasting images, and tracing the authorship of these images are infinitely more difficult on an urban scale. The content is more complex, and the representation requires an annoyingly tortuous reading. Despite the differences between "interior" and "exterior" space, between architecture and city planning, they share a unique distinction: both are concerned with the creation of enclosed spaces, the work of an architect.

g. Architecture "with" and "without" interior space. The distinction between architecture with interior space and architecture without it (PLS. 392, 393) also serves a didactic function. It can be said that an isolated obelisk, votive column, triumphal arch, or fountain is an exception to pure and proper architecture because it is intended to be seen from the exterior, like a large piece of sculpture, and cannot be lived in. This argument may also be applied to Greek temples after the 6th century B.C., for in a sense they too lack enclosed space; entrance to the holy cella was generally prohibited to the public, and the architect concentrated his effect on the plastic values of the surrounding colonnade. Brinckmann maintained that if the primary aim of architecture is the creation of space, then Greek architecture up to the Erechtheion is a historical anomaly. In his view the rule that "a new plastic creation does not involve an architectural modification if it is not accompanied by a new spatial creation" is invalid for Greek architecture, since Hellenistic plastic creations took place independently of spatial revolutions.

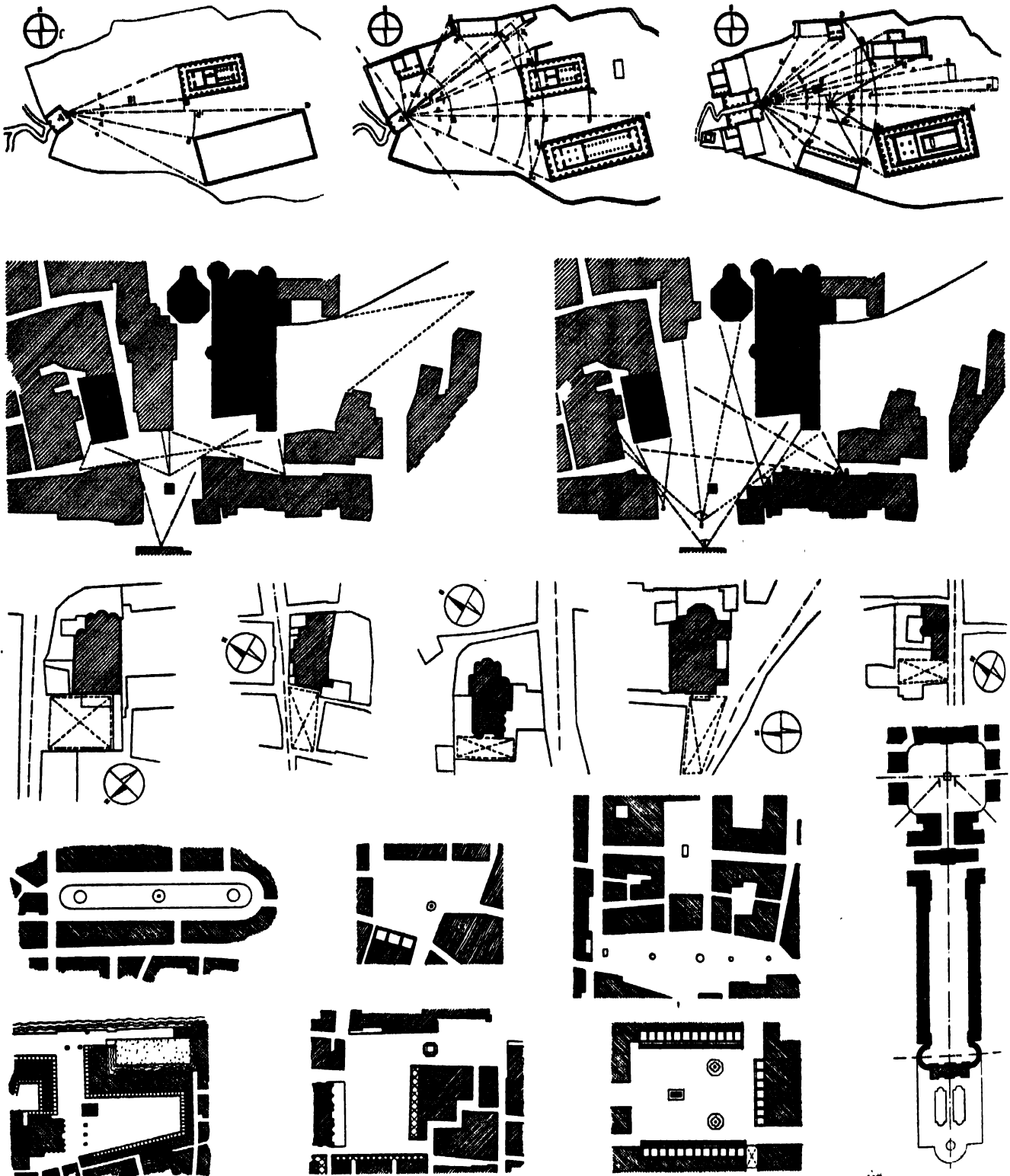
In 1923, Paul Zucker expressed a more categorical opinion on the subject: the concept of space cannot give a comprehensive definition of architectural configuration, since it is conditioned historically by classic and Renaissance architecture but contradicted by bridges, streets, towers, and commemorative monuments, as well as by pyramids, Indian temples, and Inca architecture. "Greek architecture is not spatial," he asserted, "because it is the ordering of plastically formed bodies. Spatial vision begins only with the forums of Rome." Zucker then went on to propose a "dualism between works of tectonic formation (spatial constructions) and works of stereometric formation (corporeal or plastic constructions)."

Similarly, Friedrich Wasmuth in *Der Raum* (1929) divided spatial composition into that which "proceeds from the interior" and that which "is developed from the exterior to the interior," culminating in the Greek temple.

The conceptual value of the distinction between architecture "with" and "without" interior space cannot be effectively opposed by refuting particular examples. It is not enough to argue that the cella of a Greek temple could pose an artistic problem even though it was entered only by the priests; that an interior space existed in the funeral cells and galleries of Egyptian pyramids even though they were sealed up; that towers frequently contain usable living space; and that bridges, even with balustrades, enclose a portion of well-defined space. It is more relevant to refer to the "exterior" space of the city and to note that the solids of the pyramids and the structures of the Greek acropolis separate circumscribed images from the "continuum" of the landscape, that the intermediate spatial figures they design have the same reality as the interior space of architecture and the same "void in the middle." In this sense the architectural space of Egypt is much richer and more expressive than the "labyrinthine road" within which Frobenius would confine it, and, to paraphrase Brinckmann, every "plastic formulation" in Greece is simultaneously related to a spatial revolution in the structure of the city and its quarters.

It is somewhat more difficult to characterize space where the work of man is limited to a single structure. No longer merely nature, such space is already a valid representation; yet there has been virtually no attempt to define this image. The history of the city, like all other environmental histories, is incomplete. Criticism has still not forged the instruments necessary to retrace and uncover it. It is possible that the landscape, once humanized and composed by an artist, also becomes part of architecture and of its history. A tree or a menhir, a water tower or a telephone pole, changes the landscape, gives it a different vitality, and opens it to artistic interpretations. These are all architectural elements without an interior void, but by their very presence they enclose, broaden, concentrate, or electrify a space, exalting or suppressing the lines and masses of nature. In other words, the term "space" should be given a broader definition, as Eliel Saarinen suggested in 1948. Instead of being limited to the interior enclosed by a structure, it should include the space that encloses the structure and that is given form by it. The exocosmos, the outer universe, coincides with the endocosmos, the interior world.

h. Conclusion. Having refuted the seven principal misconceptions in the interpretation of architecture as space, we can return to the struggles between art history and architectural history and between architecture and history that we mentioned in the beginning. Art historians have been accused of seeing only the surface of architecture without understanding the importance of plan, structure, and space in the building as a whole. Architectural historians have been charged with artistic insensibility, with failure to understand anything except technique and function, the extrinsic, material, and so-called "objective" characteristics of the building. The architect, with his experience in "doing," appeared in the midst of this argument and faced the disturbing task of finding in criticism an integrated and dynamic reconstruction of his work. He protested against the traditional history with its emphasis on positivism, engineering, and evolution and its abstract typological categories of birth, development, senility, and survival. He had experienced the problem of "choice," he had known liberty, he had felt creative pleasure, and he could not recognize in any history, despite its appearance of the concrete and the factual, so much truth as falseness. In this respect his protest was that of the poet. On the other hand, the evaluation of his works according to representational and traditional criteria, whether they consisted in a literary paraphrase of architectural forms or used the subtle instruments of *Einfühlung*, pure visibility, or their derivatives and mixtures, left him perplexed and annoyed. When he read that architecture was, in the last analysis, indeterminate "color" or "light" or "space," when he heard that mysterious and complicated intentions had been attributed to him that he had



Extension of the architectural organization of space into urban settings. *Upper row:* Landscape settings in Greek architecture. Athens, Acropolis, plans of three successive phases from the archaic and classic periods (from K. A. Doxiadis, *Raumordnung im griechischen Städtebau*, 1937). *Second row:* Relations between the volumes of a group of buildings and the surrounding space, before and after proposed demolitions. Grado, Italy, Early Christian churches. *Third row:* Space in front of Romanesque churches of Verona. *Left to right:* S. Lorenzo; S. Tomio; Sta. Trinità; S. Stefano; S. Giovanni in Foro. *Last two rows:* Space in public squares. *Fourth row, left to right:* Rome, Piazza Navona; Florence, Piazza della Signoria; Verona, Piazza dei Signori and Piazza delle Erbe. *Fifth row, left to right:* Venice, Piazza S. Marco; Bologna, Piazza del Nettuno; Florence, Piazza SS. Annunziata; Nancy, Place Stanislas (at end).

never known or even suspected, he protested again in a crude and vulgar way. Against abstract-figural divinations he opposed the arguments of the client's demands, ability and honesty in the craft, the price of land and construction, the laws, restraints, and caprices of the authorities and building commissions. In this double-edged polemic the architect showed his dissatisfaction with two opposed but equally biased critical directions.

The modern definition of architecture as the art of space does not deny the findings of traditional interpretations, though it evaluates them simply as particular aspects of a single problem. Rather, it brings together all the phenomena of architecture and forms them into a unified, harmonious system. Political and social conditions, the wishes of the client, civil customs, religious aspirations, technical knowledge — all the influences respectively emphasized in cultural, psychological, symbolist, functionalist, and technicist interpretations — are presuppositions of the spatial program. Although such data are extrinsic material from the artistic point of view, they are of substantial importance in the genetic reconstruction of architectural practice. The history of engineering, in particular, if it is freed of its evolutionary shackles and bound instead to the spatial organism, provides an illuminating complement to functionalism and expression. The architect understands, interprets, and represents all these concerns in space. The techniques devised for the criticism of painting and sculpture, if carefully defined, prove extremely useful when applied to architectural space and correlated with the creative personality. Every interpretation, every "way of seeing," every criterion of judgment from whatever point of view, whether sociological or pure-visibility, can provide a concrete and valuable contribution to the understanding of architecture.

The new feeling for architecture that has come to maturity is the harmonious result of the historical and theoretical researches of scholars such as Riegl and Cassirer, Wölfflin and Panofsky, Argan, Bettini, and Ragghianti, architectural historians such as Scott, Mumford, Pevsner, Giedion, Pane, and Verzzone; and architects such as Loos, Wright, Le Corbusier, and Mies van der Rohe. Through their critical or creative efforts, these and others already named have helped to formulate a clear, fitting, and comprehensive definition of the whole of architecture. In history, however, some methodological problems remain, and it is to these we must now turn our attention. The integrated concept of the art of building as the creation of space, the precise definition of architecture, indicates a method of solution that was not possible until the attempt was made, on the one hand, to establish an "esthetics of architecture" different from esthetics in general and, on the other, to submerge the substance of architecture within a generic, antiphenomenological, and abstract notion of art.

THE PROBLEMS OF ARCHITECTURAL HISTORY. The modern view of architecture, when applied to the analysis and characterization of the monuments of the past, raises many methodological problems — some have already been at least partially worked out in the field of theory and thus are relatively easy to solve — notably those concerned with the relations between economics and architectural creativity, technique and art, and typology and the history of architecture. Others are under discussion — for example, the relations between project and construction and between design and architecture — and have received precise but contradictory answers from the adherents of the different schools of thought. Still others deal with such general and related themes as the differences between "poetry" and "prose," between "official" architecture and "popular," spontaneous, or anonymous architecture, between artist and artisan, and between artistic and popular poetry. A final group of problems, concerned primarily with the genesis of architectural works, have still not been resolved, because the proposed answers have not received adequate historical investigation.

In considering these problems the intention is not to search out axiomatic formulas that will resolve all questions but rather by examining specific difficulties encountered in characterizing relevant historical monuments to indicate as precisely as possible the more troublesome critical complications.

The aim is not to show that the passage from architectural definition to historical method is quick and easy but rather to point out the obstacles so frequently encountered en route. The first part of this discussion, therefore, is frankly problematical. Developing as a series of questions, it begins with the urban conditioning of architectural vision and moves on to the problems of "prose" and "poetry" and architectural authorship. These in turn lead to an examination of the interrelationship of project, design, and architecture and to economic, technical, and typological issues. The section concludes with the basic question of the relation between architectural theory and the creative personality.

Urban conditioning of the architectural vision. A painting conceived for a definite location and a particular type of lighting is transformed if it is moved. The same is true of a statue intended to be seen from a distance, from below, or in foreshortening. The city, however, plays such a dominant role in qualifying architectural volumes or the perspective of a building that it cannot be compared in any way with the external limitations on a painting or a statue. The effect of urban change, moreover, is generally irrevocable. The Theater of Marcellus is not and will never again be the same since the demolition of the surrounding houses of old Rome; its scale was completely altered when it suddenly became possible to see the entire building from many distant points. The Church of S. Maria in Cosmedin, once a delicate accent in a closed urban narrative, is now totally out of place in a formless and open space. The imposing image of St. Peter's Square has lost power and tension since the leveling of the Spina dei Borghi and the heavy-handed cutting through of the Via della Conciliazione. In brief, a building is characterized externally by the relation between its volumetric organization and the urban spaces that define one's view of it; if this relation is broken, then the reality of the building is destroyed and to reconstruct it requires an elaborate and sometimes arbitrary imaginative effort that has no parallel in any of the other visual arts (PLS. 394-397).

Is it logical, then, to identify the architectural value of a building with its function as a component in an urban grouping — a street, a square, a city? No, this would not be correct. The Propylaea, the Parthenon, the Erechtheion would remain works of art even if they were detached from their imposing arrangement on the Acropolis and lined up on a street. The Farnese would maintain its validity even if the piazza for which it was designed were enlarged. These are exceptions, to be sure, for architectural works normally lack a harmonious "reading" without the sequence of views for which they were created and without the interplay with the material of their setting, which may be, as in the case of the Acropolis, one of the most revealing aspects of their "poetry." Innumerable other monuments, in fact, would lose their value if their urban environment were altered. The great Altar of Pergamon, exhibited as it was before World War II in a hall of the Berlin Museum, was architecturally mute without the landscape setting of its acropolis; it was as if a column from the Parthenon or a caryatid from the Erechtheion were displayed in the British Museum. In either case a sculptural experience is possible, but not a spatial experience.

The Palazzo Vecchio in Florence would remain a masterpiece even if the piazza and the streets it dominates were changed. It would become difficult, however, to understand why Arnolfo di Cambio placed its tower asymmetrically. The Palazzo Comunale in Siena, on the other hand, would no longer arouse artistic interest if the Piazza del Campo were altered. The Torre del Mangia would be even less stimulating, since it is the pinnacle of neither the palace nor the square but of the town. Does this mean that the Florentine building is an authentic work of art and that the one in Siena is only literary, not lyrically autonomous? This might be the answer if we consider architectural history as poetry and urban history as literature. The formula, however, does not seem convincing.

Leaving aside the observation that even "poetic" works are likely to lose an essential part of their "reading" when cut off from their urban context, some monuments are so bound

to their environment that they would be incomprehensible outside it, apparently because the setting furnished part of the artistic stimulus. Hadrian's Gate in Athens is a case in point. One wonders whether the heavy arch that supports the slender rectilinear parts was originally intended to be seen from above. If so, its "figurative static" qualities have been completely upset. It is certain that Borromini designed the façade of S. Carlino alle Quattro Fontane to be seen from near at hand and from a rather low point, as shown in the elevation drawings. These present a view impossible in reality, where there are unexpected anomalies and "disproportions," and thus record the intention of an artist who always conceived his architecture according to the dynamics afforded by precise points of view. Bramante's Tempietto at S. Pietro in Montorio could be moved without loss, because the setting intended to "fix" it was never constructed. The optical corrections in the architraves of a Greek temple, however, depend completely on the sequence of angles of vision intended by the architect. A temple that does not take advantage of this instrument of environmental sensibility is a schema and not a work of art.

An architectural work, then, is only rarely an isolated piece. It is more often the result of an interplay among the building, the surrounding buildings, the spaces of the city, and the natural panorama. The Michelangelesque Bridge of Sta Trinita in Florence or the bridge over the Salginatobel near Schiers by Robert Maillart is unintelligible outside its environment — the urban context of Florence for the one or the mountain precipice for the other.

The modern historian, conditioned by his experience with contemporary city planning, is accustomed to the effects of urban demolition and change on architectural monuments. He refuses to remove them from their environment, however altered and inappropriate it has become, or to make a useful distinction between city planning, which he accepts merely as "literature," and architecture, which he considers "poetry." The complications thus introduced into historical methodology are considered in the next section.

Poetry and prose in architecture. The distinction between architecture and building, between a creative activity and mass production, between the achievement of an artist and that of a worker, is not clearly drawn at present. This reflects the poverty of a critical method that takes into account plastic values but not spatial values, that considers the mural cage but not its contents, whether on the scale of architecture or the broader level of city planning. Is the distinction implied by the statement that the Cathedral of Salisbury is poetry and a farmhouse prose? Or is it concerned, rather, with form and content, with the representative functions of a building, the decoration, the precious materials, the majesty of the orders? On close inspection these interests seem characteristic of much of traditional history.

Let us first examine the problem of "prose" as it appears in major monuments. Bernini's S. Andrea al Quirinale and Borromini's S. Carlino alla Quattro Fontane are two small churches only a few hundred yards apart. An examination of the interior space clearly indicates that Bernini adheres to a classic syntax despite the elliptical plan and that his concept is timid and unclear. As Roberto Pane has said, "The praise heaped on it by many writers seems more a generalized tribute to Bernini than a critical judgment." Borromini's space, on the other hand, is highly original, particularly in the interpenetration of four ellipses and the pronounced vertical thrust. For a long time architectural historians were unaware of this clear difference in value, because they had not read the voids of the two churches and had considered only the enclosure of the space, the fabric of the walls, the decoration, and the materials. The obvious result was a highly favorable judgment of Bernini and a negative evaluation of Borromini. Critics praised the masterful orchestration of the rich materials in S. Andrea, the majestic proportions, the unsurpassable rhythms, the classic equilibrium, the perfect scale of the orders — in other words the plastic values of the work. On the other hand, as we have already indicated, both the interior and the exterior

parts of S. Carlino are incomprehensible in themselves — disproportionately high, heavy, and altogether artificial, unquiet, and disturbing. When, however, the systematically broken and reconstructed undulating wall is examined as a function of the spatial image that it energetically compresses, Borromini's genius is so powerfully revealed that the creative impulse at S. Andrea seems labored and weak by comparison.

It would be naïve to postulate that good architecture should be positive in its every aspect, spatial, volumetric, and plastic, and that the same high artistic quality should be recognizable in all parts of the building. Rather, to increase the impact of the space, volumetric and plastic values can be "sacrificed," deprived of independence. At St. Sophia, for example, the small spaces that border the great central area, which are enclosed by pierced interior walls and solid exterior walls, do not present a homogeneous, balanced, and independent image but seem, in themselves, incongruous and accidental. They are, so to speak, "suppressed" spaces, a conscious negation, an arrhythmic polemic that lacks the consistency of the ambulatories of late Roman and early Christian baptisteries and central-plan churches, though it attempts to break the interplay between the central void and the cavities that surround it (PL. 400). The extraordinary expressive power of St. Sophia is due in large part to this renunciation of an independent artistic value for the surrounding spaces, which serve merely to qualify the depth of the pierced walls. In SS. Sergius and Bacchus, Istanbul, where the equivalent spaces become more consistent, though still not autonomous, the image loses its tensions; and at S. Vitale in Ravenna, where the spatial suppression of the encircling void is expressed in ordered sequences, the resulting image is completely different. Similarly, not a single façade of Le Corbusier's chapel at Ronchamp is logically acceptable in its proportions, rhythms, equilibriums, or contrasts between solids and voids. The façades are, frankly, all quite ugly, unfinished, and apparently accidental. They are "suppressed" in favor of a compact and blocklike stereometric form that cannot be split into self-sufficient planes.

The creations of artists from Anthemios of Tralles and Isidoros of Miletos to Borromini and Le Corbusier include parts that are not "poetic" in themselves but are essential to the whole. Just as the distinction between poetry and non-poetry in Dante may prove academically useful without necessitating rejection of the cantos that are not pure lyric, so the analysis of monuments reveals both prosaic passages that are required for the economy of spatial expression and individually fine plastic passages that detract from the over-all architectural image. This fact is useful in clarifying the significance of so-called "vernacular architecture."

Modern history has centered its attention on anonymous architecture. To the aristocratic tendencies of the past it has opposed a democratizing impulse, which results not only from an awareness that a monument cannot be separated from its setting but also from an interest in building customs and an understanding of particular locales and popular vocabularies of form. The vernacular architecture of California and Scotland, the clusters of Spanish fishermen's huts, the villages of Lucania and Apulia, and the cities of Africa have become the objects of intensive research (PLS. 398, 399). What is the cause of this interest? Is it simply sociological or psychological curiosity? or a decadent boredom with official architecture? or a romantic preference for the primitive and exotic? Undoubtedly this history of building, unlike the history of architecture, is often merely a pretext for justifying one's own way of life and one's own associations, and only by some veiled demagogic impulse can it be confused with the history of art. Any examination of "vernacular architecture" will certainly uncover many anonymous buildings with real artistic value — farmhouses, shepherds' huts, mountain cabins, and the like. In such cases there is no problem of method, for these works can be legitimately included within the history of architecture by enlarging its scope and recalling Leonardo's far-reaching observation that "small dwellings put the intellect in focus while large ones distract it." For all other constructions, however, whether curious, grotesque, or as imposing as works of

nature, we must hold fast to the separation between building and architecture, between physical and artistic space, between the product of the tool and the poetic creation; there is one exception, however, and this again pertains to space.

A distinguished statuary group is generally composed largely of artistically significant pieces; in an important cycle of frescoes at least several passages are the work of an outstanding painter; there is not a poem or novel in the history of literature that does not contain some inspired writing. In architecture, however, we cannot make an analogous generalization. The Piazza dell'Anfiteatro in Lucca would be a work of art no matter what type of structure surrounded it; the urban organism of Siena has in its totality a value quite independent of the individual buildings. Some extraordinary piazzas in Rome — the Piazza di Spagna and the Piazza Navona, for example — present so autonomous an image that it seems fortunate that the walls enclosing them are not masterpieces, that the piazzas have been able to escape domination by a great personality. The façade of the Palazzo di Propaganda Fide on the Piazza di Spagna is so modest that it seems almost insipid in comparison with the trumpeting façade that faces the little street; Bernini knew how to renounce his ideas in favor of the piazza. In much the same way Borromini, on the Piazza Navona, inserted the façade of S. Agnese into a sequence of anonymous houses. It might still have proved too dominant if Bernini had not placed his central fountain off the axis of the church in a masterful scenographic maneuver that clearly related the fountain to the totality of the piazza and not to the building (PLS. 401-403).

Some of the walled cities of the Middle Ages — Montagnana is a good example — are authentic artistic entities even if they contain few remarkable buildings. The old Florentine Lungarni are works of art, as are the streets around Westminster Abbey in London, the streets of Beacon Hill in Boston, and many other streets, squares and urban complexes located far from the centers of creative impulse. A modern history that turns the experience of the city into an experience of architecture, or vice versa, should take them into account. It is not a question of democratizing the history of art by leveling the barriers between prose and poetry but, again, of focusing attention on space and on the elements that enclose it. We should not say, however, that the Piazza dell'Anfiteatro in Lucca, the Piazza di Spagna, or the streets of Martina Franca or of Noto are beautiful despite the lack of outstanding buildings but rather because of their authentic conception of space, which gives personality to the interior void.

The success of the Piazza S. Marco in Venice depends on a spatial reality formed by all the surrounding elements: the eclecticism of the façade of the basilica, the lack of definition or conclusion in the repetition of the module in the Procuratie Vecchie, the minor and mannerist tone of the Procuratie Nuove, and even the ugly Napoleonic wing. The architects' subordination of their contributions to the space of the piazza was at least partly conscious, as illustrated by Scamozzi's decision to forego a plastic framing of the Procuratie Nuove and to use instead an almost imperceptible setback of the three orders and their trabeation in a very subtle rounding off in elevation of the enclosed space. Although Biagio Rossetti and Domenico Fontana did not excel in designing buildings, their additions to Ferrara and their replanning of Roman streets under Sixtus V are richly inventive. They deserve greater recognition in the history of architecture than they have received in the past.

Even though we admit the identity between city planning and architecture, demonstrate the impossibility of separating the monument from its environment, and recognize that the value of a spatial image may be independent of the particular merit of its plastic components, we still cannot unconditionally accept prose as art. Our judgment must be based on the way space invades a solid, on the way it is enclosed by walls, a roof, and a dome, or by houses and rows of trees, no matter how artistic the containing elements may be. In a consistent method of characterization, the prose of building become an inseparable function of the poetry of space, whether on the level of architecture or of city planning.

Is such an explanation really a conclusion? Or does it, perhaps, create a hypothetical reality, a mythical personality of spaces? Has it not merely resurrected the old dubious categories? The environment and city webs created by Hippodamos of Miletos, Biagio Rossetti, Domenico Fontana, Georges Eugène Haussmann, and Raymond Unwin do not pose any problems of method; but who conceived the other spaces? Were they thought out systematically, or are they the product of accidental juxtaposition? Can a phenomenon be considered a work of art if the creative personality is not known and cannot be postulated? These questions raise an even graver problem.

The genesis of architectural works. The concept of the city as a work of art and the distinction between architecture and building lead to one of the knottiest problems encountered in any attempt to bring architectural history up to date. It is well known that modern thought changed art history into a history of personalities, that the monograph has largely replaced the general artistic or literary essay. Obviously, if this approach is applied to architecture, its history becomes simply a history of architects. Architecture, as a thing apart, is an abstraction, a myth. If it is considered real, it is given laws, evolutionary patterns, and a typology, which are, in fact, the roots of traditional history. The contemporary view would seem to state categorically that only architects can be the subject of history.

This theoretical statement, however, encounters enormous difficulties when it is applied in criticism. Qualitatively they are perhaps not too different from the problems of attribution in painting and sculpture, but quantitatively they are so much more numerous and so much more involved that they seem insurmountable. For the present it is better to leave aside the problem of authorship in works that rose during an age of anonymous production or that were carried out over a long period of time and to limit the discussion to buildings since the Renaissance. Consideration of economic and technical factors must also be postponed, for they are frequently so overwhelming that one is tempted to attribute the work to the client or the builder rather than to the architect. It is assumed, in brief, that the architect in each case acted with complete freedom. Even when the field is thus narrowed, few works can be exclusively identified with one man from conception to execution.

Filippo Brunelleschi has been the subject of many studies, but what work is solely his? Certainly not the dome of the Cathedral of Florence; not only has the original plan sometimes been attributed to Arnolfo but the form was conditioned by the body of the church and the lantern was crudely executed after the death of the master. Nor can we give Brunelleschi the portico of the Ospedale degli Innocenti, for the conclusion of the rhythms of the arcades, which is the key to the entire composition, is entrusted to the weak motif of the lateral pilasters, which are obviously not his work. At Santo Spirito the failure to continue the theme of the side aisles across the interior façade destroyed the original centralized concept. The Pazzi Chapel lacks its projected triangular frontispiece, and it is quite difficult to imagine the effect if it were substituted for the present loggia. It is pointless to discuss the Rotonda degli Angeli, a project known from drawings of Giuliano da Sangallo, the unfinished Palazzo di Parte Guelfa, or the Pitti Palace, which was greatly altered in its proportions, masses, and spaces. Hence the reading of the works of even a well-studied artist like Brunelleschi demands such an effort of imagination and reconstruction that it frequently ends by excluding esthetic enjoyment (see BRUNELLESCHI).

Many paintings, frescoes, and statues that exist only as fragments or as sketches can still be admired for what they are. Even though the head of the Nike of Samothrace is missing, one does not stand grieving before the statue in the Louvre, but rather concentrates his attention on the body, the wings, and the himation. Tiepolo's sketch for the ceiling of the Scalzi is a finished work of art, quite apart from its function as a preparatory study. The "unfinished" work of Michelangelo is a definite mode of artistic expression. In architecture,

on the other hand, one wonders whether the ruins of the Roman Forum, of cities such as Tell el 'Amarna, and of palaces like those of Phaistos and Knossos would arouse a truly esthetic experience if they were freed of emotional or historical associations. Do these remains actually provide an architectural experience, or are they only the point of departure for conjectures that are frequently quite arbitrary? Are the Roman imperial forums really "legible" when their appearance can barely be traced? Thus the whole vast field of urban and architectural ruins raises a host of questions: Should artistic history include only what remains and can be experienced, or should it treat what is known or can be supposed to have existed in the past? Is a hypothetical work of art still a work of art (PL. 404)?

Having touched on a precise personality like Brunelleschi and on the urban complexes of the ancient world, we may now consider the problems posed by a monument like the Basilica of St. Peter. It would be difficult indeed to suggest that this early Christian monument provides an esthetic experience. Only a few fragments remain, and the reconstruction is concerned primarily with the typological theme. Do the projects of Bramante, Antonio da Sangallo, Peruzzi, and Raphael provide an architectural or spatial reality? This question is also pertinent to the relation between project and building that we shall soon discuss. Michelangelo, Giacomo della Porta, Carlo Maderno, and Bernini emerge as the major protagonists in the present structure. The genius of Michelangelo seems so overpowering that the whole building could have been resolved in his mind; yet Porta's elevation of the dome is partially responsible for Maderno's unfortunate decision to lengthen one arm of the cross. In the modern history of architecture, or, rather, of architects, who should receive credit for St. Peter's? If its various features are discussed separately in four or five monographs, what remains of the church? If reduced to a group of "moments," quite indefinite in themselves and quite difficult to reconstruct, would it still exist as an entity, or would it become simply a series of disconnected statements, of partly realized dreams?

Westminster Abbey is even more complex because the personalities that gave it form are less clear-cut. If the early church of 616 is separated from the Benedictine monastery of 960, the partial rebuilding of 1055-65, and the transformations of Henry III in 1245-60, and then the styles of the various sections are identified — the Norman, Romanesque, and Gothic, the Early English, Decorated, Perpendicular, and Tudor, as well as the Renaissance contributions — by what means and on what basis can the building be revived? How can it be restored as a visual entity when its various stylistic components have been so divorced and so neatly pigeonholed?

The "ideal" reply is obvious. The task of history is to document the contributions of the various artists who worked on St. Peter's or Westminster Abbey; no other is legitimate. The monument does not exist in itself; its parts have value only as so many different works of art. In its critical application, however, this method encumbers the action of the historian. On the one hand, it can lead him to dissolve the vision of the monument into a number of separate impressions — one enters St. Peter's: impression, the clumsy basilica of Maderno; one moves on: impression, the glory of Michelangelo; one arrives at the baldachino and papal chair: impression, Bernini's triumphs. This, precisely, is the pure-visibility approach that was rejected above in the discussion of representational and architectural space. On the other hand, the modern historical method may result in a long, complicated, and tedious chronicle of projects, proposals, parts begun and then abandoned, execution that does not follow the project, and continual elaborations, large and small. When this task is completed, the architectural historian is exhausted. Although he may think he has fulfilled his obligation, he has not even begun to carry out his responsibility to evaluate, nor has he attempted to reintegrate the monument. After reading the weighty and learned volumes on St. Peter's and Westminster Abbey, one is tempted to invite the patient collector to come visit and enjoy the monument.

The same problem is posed even for simpler architectural organisms such as Sta Croce in Gerusalemme in Rome. When

Gregorio Gregorini, with Borromini-inspired fervor, began work on it, he did not have the courage to demolish the old apse with its broad Early Christian accents. As a result the 18th-century theme is rudely interrupted. Does the church exist as a unified fact? Or should it be divided into two extraneous images that can be assigned to widely separated chapters of architectural history? Perhaps ideally the church can be considered a unity, since Gregorini accepted the data of the early Christian church and translated them into 18th-century terminology. But to bypass the obstacle with a dialectical expedient so little suitable or convincing hardly seems a satisfactory solution.

In modern architecture the difficulties of assigning authorship are not overcome but rather underscored. Why is it that many architects produce three or four truly superior works and a score of mediocre ones? Painters, writers, musicians have happy moments of creativity together with darker periods. With architects, however, it is not so much a question of non-productive phases as of extrinsic conditions that do not permit them to work. For ten years Wright, Le Corbusier, Gropius, and Mies van der Rohe failed to construct a single important building. Had they exhausted their creative resources? No, they were unable to find a commission either because of an economic crisis or because of a wave of academic reaction against them. In some cases an architect refuses to recognize a building as his own because the execution has been so poor that it vitiates the artistic validity of the work. In the present as in the past, written documents that attribute a building to one architect or another are only relative proof of authorship, though the researcher tends to trust them implicitly. The architect is paid even when his work has not been adequately carried out; the salary he receives pertains to the project or to technical direction and does not always prove that the work is solely his.

Along with these questions on the relative importance of the creative personality in the genesis of architectural work — questions which are at the center of the entire critical problem — there is the conflict between architectural and artistic history. The polemic that took place in 1938 between Gustavo Giovannoni, the last heir of the positivist tradition, and Adolfo Venturi is perhaps the clearest expression of this problem. In reviewing the first of the three volumes on 16th-century architecture in Venturi's celebrated *Storia dell'Arte*, Giovannoni defined the author's method as "dangerous and fallacious," for the following reasons. (1) The system of biographies is not suited to the history of architecture, since architecture is largely a matter of the evolution of types and technical procedures. (2) A lack of interest in the methods of construction and administration and in a study of the building organism result in an architecture seen only as surfaces. (3) A structure is a positive work that requires a positive exegesis, not one based on visual observation. (4) Analysis of the details of a building as a means of identifying the architect is of little value, because the details are frequently entrusted to craftsmen. Giovannoni concluded, "The development of a work of architecture, with its multiple concerns of space and time, vicissitudes and influences, technical and financial organization as well as artistic organization, differs from the unified and personal procedure involved in painting or sculpture."

To this accusation, Venturi reacted quickly and vigorously. (1) "The history of morphological types is a history of abstractions. . . . Under the cloak of science, it has produced a history of fantasies. The historians of painting and sculpture know this full well. When they make use of morphological typology, they never confuse it with historical reality. Architectural historians, however, have always been a little behind their colleagues, because they have confused construction with architecture, practice with art." (2) "Technical and administrative method is certainly a part of history, but of economic, not artistic, history. Giovannoni asserts that by not concerning myself with the economic history of the monuments, I 'fail to understand the monument.' I reply that my understanding is clear and his is confused. Confusion never leads to truth." (3) "Giovannoni maintains that I lack 'a positive

method in the study of a positive work.' This statement has perhaps no meaning at all — in any case it is not positive — unless he wishes to exclude from the study of architecture those ideal characteristics that cannot be measured with a square and compass." (4) "Why must intuition act only on the ensemble and not on the details? Why should intuition serve only for complex reality? In what does the complexity of architecture inhere? In its 'collective' character. Its authorship, Giovannoni claimed, 'begins with the client and continues in the person of the administrators and contractors, who in many cases overshadow the architect, in the artisans and the humble masons, marble carvers, and carpenters, each of whom brings his own personality to the rising building.' Let us place a flower on the tomb of the poor massacred architect. Then let us make a heroic effort to believe that such a production is a work of art. Who can say that the architects of the Renaissance paid no attention to details? They were not contractors, and if they were, were they not artists? When they were artists, they followed their dream to the last finishing touch. The architect gave drawings, profiles, sections, wax, and wooden models to his stonecutters so that they would not be copying machines but an extension of his own arm."

To this Giovannoni replied in a vague and rhetorical manner: "Typology . . . is not an abstraction but the direct expression of the life and culture of a period; . . . technique in architecture is inseparably bound to this expression . . . Architectural thought is both technique and art; it is created by a unique energy that cannot be divided . . . I believe that in establishing the method to be followed in the history of architecture, we should place the following principles first. (1) We should consider the combination in one work of the expression of plan, section, and constructive studies; technique and art; the organism and its exterior appearance. (2) We should use the comparative study of architectural details more as a means of determining a school than as a means of assigning an author. We can arrive at more precise conclusions when drawings provide their sure testimony. (3) We should consider the intuitive vision of the whole as a hypothesis until solid principles have been established for bringing together the many threads provided by documentation and by technical, stylistic, and morphological examination. (4) We should base research on a typology of buildings and on theories and schemes of proportion, which have always been the characteristic and fundamental laws of any architectural period, progressing from the single work to that of a generation, to the constructive and artistic thought of a thematic area, and finally to the feelings of the race."

It is not possible to conceive of more diametrically opposed critical views than the two just cited. Venturi wished to rediscover the personality of the artist. Giovannoni's aim was to move from the individual work to the "feelings of the race." Venturi advocated the merging of artistic and architectural history, and Giovannoni clung to methods characteristic of 19th-century archaeology. Despite his reactionary esthetic convictions, Giovannoni favored, at least implicitly, the legitimate establishment of a more organic study of the building structure — the themes of planning and distribution, the concept of volumes, the spatial organization. His fault lay in failing to relate these studies to the artistic personality and the individual work and in denying the value of such an approach.

Later developments in critical thought have confirmed Venturi's reasoning without analytically opposing Giovannoni's preconceptions, which are those of the positivist and categorical tradition. As a result they still persist in a large area of architectural history. It is not enough to postulate that the artistic personality can be found or assumed in every monument. To do so would be to run the risk of writing an unacceptable introduction to general esthetics in which the specific problems of architectural history would be out of place. It would mean, moreover, the acceptance of an incongruous and methodologically eclectic history of architecture, a mélange of economics, techniques, typology, and art criticism.

The questions involved in tracing the genesis of architectural works make it necessary to analyze the relations between proj-

ect and construction, between design and architecture — themes that we have already encountered in sketching the problems of St. Peter's and Westminster Abbey and that represent the outstanding difficulties in historical method. We must discredit the commonplaces of economics, technique, and typology, which Giovannoni considered the true movers in architectural activity. Once the field has been cleared of these misconceptions, we shall be able to distinguish the artistic personality under all the theories that have tried to hide or suffocate it.

Project and execution. The separation between conception and realization is greater in architecture than in any other art. A painting that was not executed by the artist who conceived it could never be a work of art. Even when the master prepares the sketch and leaves the execution to his students, it is the sketch, not the painting, that is the work of art. A sculptor could make a hundred preparatory drawings for a statue, but it would be incredible if he were content to leave the modeling to someone else. It would be even more absurd to propose that a poet should let others compose his verses. A work of art exists only when it is expressed, and it is expressed in the execution, in the process that extends from the first fragmentary concept to the last brush stroke, the last blow of the chisel, the correction of the last line, the final note of the symphony. In architecture, however, the artist is rarely responsible for the entire work. If we were compelled to reject all the buildings in which the direct and continuous presence of the same personality cannot be documented, we should be left with few monuments. Any historian who has attempted to apply the traditional criteria to this problem of relation between project and execution has found himself extremely limited.

In *Beyond Architecture*, Arthur Kingsley Porter acknowledged the fascination of the ruins of the Roman Forum but denied their artistic value, arguing that grandiose organization and powerful constructional techniques are not enough to redeem works in which one recognizes a sharp cleavage between the organism and its decoration. In his essay *Leon Battista Alberti: Nonartist*, Julius von Schlosser accused the noted humanist of creating drawing-board architecture and entrusting his plans to builders — discussing the details with them by letter but not taking a personal interest in the actual construction (see ALBERTI). The theses of Schlosser and Porter were considered scandalous and shocking, but no one has yet explained either how a building can be considered a work of art when successive layers have been imposed on the original structure, frequently at widely spaced intervals, or how a man can be called an architect when he does not model his spaces, his volumes, and his details but is content to imagine or describe them. If such a person is really an artist, he is psychologically quite different from the other artists — the painters, sculptors, musicians, poets, and directors — in whom the impulse to make, to create by doing, is innate.

Our experience with modern architecture does not help us understand this mysterious kind of artist, for contemporary architecture is much more mechanized than that of antiquity or the Renaissance. The relation between project and execution has become more rigidly schematic with industrialization. Construction is gradually becoming simply a matter of assembling prefabricated parts, planned down to the last nail and the smallest detail in the working drawings and specifications. With no variations allowed in the execution, the architect's sphere of action is reduced to the project. In 1895, T. G. Jackson, one of the leading scholars in the history of the architect, was already referring to the modern architect's office "with its draftsmen and drawing-boards, its clerks and office-boy, and its principal sitting in a comfortable chair, in a broadcloth coat interviewing those whom it is the fashion to call his clients — a title more suggestive of law than art. . . ." In contrast he described "the medieval architect, with his tools in his hand, among his workmen, in the building yard or on the scaffolding . . . in his shirt sleeves . . . not in professional costume . . . and setting out his work on the ground, on the paved stones or the rough timber, and not on paper at a distance of perhaps hundreds of miles from the scene of action."

The difficult conditions of construction in modern times may seem to suggest that architecture today is restricted to the project and that the building is only the mechanical extension of the plan. This is quite true in most cases, but the works that result have nothing to do with architecture as an art. They are the natural product of a professionalism restricted to imagining spaces and volumes statically without actually modeling or creating them. The few truly authentic contemporary architects have become so by struggling against this professionalism, by renouncing success for years, and by discovering at their own expense and with extreme sacrifice the secret of the transition from project to construction. It is enough to read Wright's autobiography to understand how his genius matured slowly on the job through long days and often nights of building, undoing, and experimenting during the construction. Peter Behrens and Walter Gropius carried their studies to the building, accepting the machine only on condition that it humanize the product and using it to invent new industrial procedure. Mies van der Rohe took five years to build a house near Chicago—a crystalline prism suspended over a "prefabricated" structure that to the inexperienced eye would appear to stem from a very elementary idea. The buildings of Le Corbusier, rationalist architect par excellence, seem to be the result of an inevitable mathematical vision, which is absolutely inelastic even in the most typically "purist" works, such as the Savoye House at Poissy and the Swiss Pavilion at the University of Paris; yet he continually re-elaborates the project during the course of the execution. The chapel at Ronchamp, for example, cannot be defined graphically, as shown by the difference between the project and the finished work.

The conclusion to be drawn from contemporary experience is also valid for the past: there are only a few true architects, and even some of their works fall short of art because they did not supervise the execution. Architecture is not completed in the project, which, as we have seen, only documents the interpretation of the building content. It is unthinkable that one artist could adequately execute another's plan, for no matter how exact the drawings, no architectural work has ever had a copy of equal value. The transition between project and realization does not admit a rupture; the creative image cannot be duplicated.

The fact that works of art are rare in every age and every country should not surprise those who observe contemporary production. What percentage of the thousands of buildings constructed during a year throughout the world have an absolute value? Is there any reason to suppose that the percentage was higher in the past? The monuments that have endured over the years were not chosen by a jury of critics; many splendid buildings have been destroyed, and innumerable artistically insignificant structures remain. In the first half of the 20th century the Victor Emmanuel monument in Rome was preserved, but the German Pavilion at the Barcelona Exposition of 1929, a milestone in the history of modern architecture, was torn down; the Palace of the League of Nations in Geneva was constructed, and Le Corbusier was denied the right to realize his own splendid plan. Today, as always, economic, practical, symbolic, religious, and political reasons, not artistic value, determine the selection of buildings. Architectural history cannot use one set of critical criteria for the present and another for the past; it must learn to sift out the rare works of art from the complex of building construction that may be significant for a civilization or a culture but that is not genuinely creative. Fascination with ruins, interest in historical texts, the impressions of an environment may lead to natural and legitimate emotions that have nothing to do with critical evaluation. Many monuments are precious and irreplaceable documents for history, but not for the history of art. All works that do not provide a real experience of spatial voids and volumes, including projects and ideal reconstructions of monuments, are fantasies and suppositions, not architectural expressions.

The significance of the project in the creative process of architecture has been widely argued. Among those who support a thesis in opposition to the one expressed here it is enough to cite Vincenzo Scamozzi and, among the moderns, Luigi

Grassi. In his *Idea dell'Architettura Universale* (1615) Scamozzi defined the relations between conception, project, and execution with a clarity not found in Vitruvius or Alberti or in his immediate predecessors—Serlio, Vignola, Palladio, Lomazzo, and Zuccaro. Immersed as he was in the complete rationalism of the Academy of Vicenza, he defined the building as "a scientific conception in the mind of the architect." It is an interior image. The project as designed is nothing more than a means by which the architect communicates his own "invention" to others. As for the execution, it concerns the master builders, the "imitators" of the project. In Scamozzi's view architecture ceases to be a creative process, which exists in time, but becomes the intellectual solution of a theorem: "It has its own sure and indubitable demonstrations; for this reason it can be demonstrated and taught." It is natural that such a scientific interpretation of architecture should place the greatest value on the project. In fact the logical aspect of composition is resolved here and need not be prolonged in the tangible form of the building. According to this concept it would be absurd to judge an architect on the basis of buildings constructed by the "imitators" of his project, because the building is only a debilitated and frequently unfaithful translation of the interior invention, which is fully expressed in the drawings.

Scamozzi the artist paid the price of his doctrine; his palaces and villas are the products of an extraordinary reflective intelligence, but almost all are arid, intellectual, devoid of warmth and humanity.

In his *Storia del Disegno* (1947) Luigi Grassi refuted the distinction between *Architekturzeichnung* and *Bildhauerzeichnung* advanced by Linfert, Keller, Heydenreich, and Gradmann. He also questioned the validity of the distinction between drawings conceived for architectural works and those intended primarily for stage settings. In opposition to Carl Linfert, he argued that such distinctions and classifications may have documentary value, prior to the esthetic judgment of the architectural work, but that it is the work itself, particularly as the expressive image or revelation of the creative personality, which interests the art critic. The project "represents and involves, so to speak, the entirety of its author's personality. In reality the project is 'pure architecture,' a spatial individualization.... In this sense, it can be considered as the completed work of art, in which the architect has already said everything; moreover, the phenomenon of architectural creation, in so far as it is a theoretical problem of aesthetics, is totally fulfilled in and through the project." This thesis is unacceptable. Any value it has is on the theoretical side—for "pure" architecture uncontaminated by construction or use, for the idea or spatial "individualization" divorced from any concrete or dynamic experience of space, for the potential "quid," but not for the declaredly empirical and vulgar actuality of architecture.

From the historical point of view, however, the project is not architecture. It has been likened to a succession of musical notes that indicate a melodic, contrapuntal, or symphonic motif but that require instrumental execution if they are to be translated into sound. Actually an architectural project is somewhat less than this. The poor execution of a passage of music leaves intact the possibility of a better one by more skillful performers. The transformation of a botched building into a significant work, however, requires not simply better qualified builders, but a new architect. Projects are neither beautiful nor ugly in themselves, in so far as they neither exclude nor guarantee a positive architectural result. In the hands of a true architect a badly organized and apparently mediocre project can become a work of art; by the same token there is not a single project conceived by a genius, a single "intention" of Brunelleschi, Michelangelo, Borromini, or Wright, that could have resulted in a poetic image without the assiduous presence of the author. In architecture, as in poetry, there are no distinct creative phases, no Aristotelian cleavage between form and matter, thought and act, author and executor. If a separation does occur, architecture is compromised or lost.

Design and architecture. Our insistence that architectural expression is completed only when the work is realized does

not imply that projects, and particularly autograph drawings, are not important for the understanding of monuments. Quite the contrary, if the artistic action is no longer considered statically, then the task of the critic does not consist simply in describing the emotions and thoughts aroused by his vision of the buildings but rather in identifying the creative process that leads from the first thought fixed in a sketch to the major project to the plans of execution to the constructed building. Every graphic elaboration of the original concept, even the hastiest shop sketch of a detail, is useful to this end. The harsh contrast between the Procuratie Nuove of Venice and the side of Sansovino's library cannot be understood without an examination of Scamozzi's various proposals and weak transitions. The drawings of Carlo Rainaldi's projects are indispensable in indicating how he was able to define the spatial enclosure of S. Maria in Campitelli (PL. 405). Borromini's sketches for S. Carlino and S. Agnese in the Piazza Navona and Wright's for Falling Water explain the genesis of an inspiration.

The problem of original architectural drawings is not, however, quite the same as the problem of projects. Michelangelo's sketches for the façade of S. Lorenzo, Juvara's for the Campidoglio, autograph drawings by Mies van der Rohe or Alvar Aalto have an entirely different value from the geometric designs for the plan, perspective, or sections of a building. Project drawings are generally assigned to a draftsman and are hence anonymous, but the freehand sketches of the master are finished works of art. In this sense there is no difference between a preparatory study for a fresco, the first sketch for a statue, and the "motif" of a building. An artist's drawing is valid in itself, not just as a prefiguration of the final work and even less as the "poetry of the unfinished." The value of an architectural sketch is independent of that of the building which may be derived from it and which may constitute another, wholly distinct work of art. This is proved by the fact that the sketch is liberated from the restrictions of scale, of proportions related to man, of physical and spatial dimensions (PLS. 406-408). Eric Mendelsohn made his drawings on a few square inches of paper, but they remain artistically expressive even when enlarged a hundred times. They are fascinating architectural fantasies, but not architecture. There are, however, no sketches for his greatest masterpieces of building, the Schocken Department Store in Chermnitz of 1928 and the Columbus House in Berlin in 1931; for these there are only cold linear studies. Mendelsohn knew how to distinguish the evocative value of a sketch from that of a building; he knew that an apparently slight sketch could give rise to a splendid work and that a more impressive drawing might not. He knew as well that the transition from a graphic note to the project and from the project to the execution is anything but mechanical and, moreover, that each step implies qualitatively different problems. Too many modern buildings, based on brilliant sketches or seemingly original projects, are nonetheless insipid, betraying the abstract and graphic character of the design or the equally abstract character of the model.

They seem, in fact, to be merely enlarged sketches or models. The authors of such buildings are not architects. They have not known the experience of creating spaces, of realizing the form in concrete materials, but have stopped at a phase of the work comparable to the plot of a novel or the script of a film, that is, a phase of "virtual" values that may never be realized as architecture.

Architectural drawings, then, interest the historian in three ways: (1) if they serve as preparatory studies for buildings that are actually constructed, they document a step in the creative process; (2) if they are artistically successful, they belong to the history of art, but not specifically to the history of architecture, in so far as they are finished images and not merely prefigurations or substitutes; (3) if they are by master architects who have repeatedly demonstrated their ability to progress with complete coherence from the suggestion to the actual building, they indicate a biographical event, an intention, a lost chance.

It is not only architectural drawings that have been confused with architecture. Similar reasoning has been applied to the

painted architecture of frescoes and panels (PL. 409); to the architectural visions of a genius like Piranesi; to such amazing perspectives and elevations of monuments as those of Specchi or Letarouilly; and even to certain exceptional "critical interpretations" of an environment, such as those of Canaletto, Guardi, De Pisis, or Kokoschka for Venice (PL. 410). They are not documents, or even surrogates, of architecture. No project, not even his own, is perfect for an architect, for he always wishes to change it, at least in some detail, during the construction; nor is any building completely suited to the function that it must assume in a perspective drawing or painting. Artists of the so-called "Pompeian Style IV," however, turned building elements to decorative use in their ornamental fantasies; in his static representations, Specchi made his monuments more fully visible by enlarging the piazzas and streets before them; Piranesi reduced the proportions of the human figure so that the scale of the baths, the ruins, and the prisons would seem larger and more frightening, Kokoschka exploded Longhena's volutes into an expressionistic sky over the lagoons. Such works are frequently useful in indicating the "criticism" of a building implicit in the artist's modification of a relation or a detail to suit his own taste; but they cannot be identified with architecture, because they do not provide a dynamic spatial experience. The frequently recurring attempt to draw plans and sections of supposed buildings from "painted architecture" is an amusement that has never led to the discovery of an authentic architectural work. Similarly, the best possible photograph of a monument, though it may be a masterpiece in its own right, is not a substitute for the architectural work itself. Architecture triumphs not when it is merely prefigured in sketches or projects and not when it is represented in other works of art, but when it exists itself, in the reality of its spaces.

Economic restrictions. The relation between project and building leads directly to the problem of content in architecture. Why does every client insist on seeing sketches and diagrams? Why is history marked by competitions for public and private buildings? Clearly they are intended to establish an economic and organizational program for the construction and not to assure its expressive value. Anyone who desires a work of art does not establish a contest and choose the best project; he begins by choosing the best architect. If the Teatro Olimpico in Vicenza had been opened to competition, Palladio's scheme, which was anachronistic in comparison with the new theater designs of the 16th century, would probably have failed. In developing the first practical, rather than artistic, representation of the building, a project is a necessary instrument. At this point we encounter the problem of economic restrictions on architecture and the related issue of the architect's artistic freedom.

Writers and critics who have accepted the distinction between "free" and "not-free" arts have naturally classified architecture with the latter. When they have attempted to rescue its dignity from association with practical uses, they could only conclude that architecture as a creative activity is limited to a few nonutilitarian and symbolic objects — obelisks, commemorative monuments, temporary constructions, and particularly ornate temples. Truly "free" architecture, they would argue, and hence the only artistically legitimate architecture, is painted or designed, or, in brief, separated from function and technique. It is easy to see how such prejudices have influenced the history of architecture. A search for nonutilitarian parts led immediately to façades and decoration, which were considered "free" architecture developed almost entirely by the inspiration of the author, rather than to interiors, which seemed to be conditioned by use. It is not surprising, therefore, that critical attention concentrated on the plastic characteristics of architecture and not on the spaces.

Leon Battista Alberti classified buildings into those which "perform a function," those which "serve the organization of the city," and those "devoted to the beauty of temples." A different, yet similar, division is represented by Hegel's categories of "classic," "romantic," and "symbolic" architecture, and basically the same distinction is expressed in the Crocean terms

"prose," "literature," and "poetry," which Roberto Pane has so successfully adapted to the field of architecture. As shown in the first part of this essay, architectural poetry differs from prose not because it represents an official building program — because it will serve as a temple or mansion — but because it is the product of a creative spirit. Architectural prose — which, as we have seen, has a function in the environment of spatial poetry — is not such because it derives from programs restricted by practical functions or financial limitations but because it is not inspired by an artistic personality. The problem, however, merits deeper consideration.

In the past as at present, the activity of "building" has rarely produced anything but prose. It is initiated by economic considerations and the necessity of housing the various functions of man, a requirement that has nothing in common with artistic impulses. It should be added that beauty in architecture can rarely be translated into economic terms. A public building does not acquire greater monetary value because it is recognized as a work of art. If anything, this diminishes its value in that it can no longer be altered to suit changing practical needs. There is no market for architectural masterpieces; there is no cause-and-effect relation between artistic and monetary worth. Buildings are sold at so much per square or cubic foot; their value does not change because of the reputation of the architect, even if he is a genius. This situation has no parallel in the other arts, where recognized expressive value and monetary worth are almost always correlated.

A writer, a composer, or a painter may produce an artistic work because of some inner impulse. At worst, the writer may not find a publisher, the composer may be refused by orchestral directors, the painter may look in vain for a gallery; but the novel, the musical composition, the painting are at least finished works that can await recognition. The architect, however, is in the position of a novelist who requires a publisher not just to ensure the printing of his book but to enable him to write it. In other words, the architect depends on the client and the builder not only for the mechanical execution of an accepted project, as the novelist depends on the publisher, but for an opportunity to work out his image, to make it concrete in space and time. For this reason, the architect's profession is eclectic. It is not enough for him to understand the world in order to represent it; he himself must become involved in economics and construction. He must find a client so that he can realize his work. He must sell before he produces.

The creative act of the architect is so bound to the understanding of the client and to the honesty of the builder that Wright spoke of architecture as a triangle composed of these three requirements. If one side is missing, architecture degenerates into building. The client supplies the "content," in a manner of speaking, which the architect elaborates, forms, and makes personal. The quality of the content, of course, implies a greater or lesser stimulus to his inspiration. A century ago an architect would have sneered at building simple houses; today he would refuse to consider an equestrian monument.

Once he has interpreted and assimilated the building program, he should be permitted to develop it at will. If the client intervenes, arbitrarily transforms the project, alters the spaces, volumes, or materials, he acts in the same way as a movie producer who tacks a happy ending on the script of a tragedy. It is not necessary to illustrate the ways in which the builder can ruin a work of architecture, since the subject has already been examined in the discussion of the project and execution.

The fact that the client-architect-builder triangle is rarely closed explains why so few architects have consistently produced significant works. The personality of the architect, though indispensable for the creation of a work of art, is not enough to guarantee it; at the very least, a client is needed as well. It is clear, however, that the client seldom chooses an architect on the basis of a purely artistic evaluation. Louis H. Sullivan was generally regarded as a genius, but as an impractical genius, professionally inefficient, and socially captious; as a result he died in poverty. In order to inspire faith in the client, the architect must exercise an authority that does not derive from his creative abilities but rather from his proficiency in solving

problems having to do with the economics or the function of a building. He must transpose himself into another field in order to produce artistically in his own. Otherwise he cannot be an architect, even if he has the potentiality. The idealistic observation that none of the arts is "free" is undoubtedly quite exact. A drama cannot last for 10 hours; a fresco or altarpiece is bound by determined dimensions, lighting conditions, and the requirements of portraiture and function. There is, however, a difference of degree. Every art activity is economically conditioned in one way or another, but none so much as architecture.

The definitions of architecture quoted at the beginning of this essay show that the beauty-use dilemma has perplexed architectural theorists from the very earliest times. The opposing views appear in the literature with the regularity of a swinging pendulum; the aristocratic attempt to free architecture from economic considerations and limit it to commemorative monuments and other "useless" buildings has been quickly followed by the argument that architectural beauty is mechanically derived from the fulfillment of practical aims. In modern times the separation between architecture and the other visual arts has become even greater. While the other arts have been progressively moving away from the commissioned work, architecture has had to respond to the most constricting economic necessities. The ideal of comfort and convenience has imposed even further restrictions. In Renaissance palaces the proportion of windows on the façade was preserved even though this made it necessary to construct a short flight of stairs in a room to give access to them. In the 19th century an entire floor in a royal palace could be constructed without windows in order to give greater dignity to the cornice. If an architect of today were to resort to such expedients, if he were to allow form to dominate use, he would be considered a madman. Life prevails over symbolism, representation, "monumentality." For the old-fashioned formalists, the obvious conclusion is that architecture as an art is finished, that nothing remains but building and prose. Just as the history of literature excludes the writers of daily scandal sheets, they would reason, the history of architecture should exclude all buildings conceived solely for use; since there are so many today, the centuries-old book of architecture is closed.

This pessimistic and almost paradoxical thesis can be refuted in several ways. The most customary is to demonstrate that a purely useful object does not exist, since beauty can be found in a machine, a motor, or an industrial structure. The whole of human production involves a tacit acceptance of "design." Another argument consists in pointing out "useless" elements in the most utilitarian and rationalistic architecture. For example, even in Le Corbusier's "machines for living" the "play in light" of some of the undulating walls corresponds to a purely formal impulse. A third argument is that the modern concept of building economy, particularly the insistence on comfort, includes a strong psychological component and that functionalism must be interpreted not only in mechanical and biological terms but also in human terms. In this frame of reference the architect has such a broad choice that he can almost be considered free.

It is, however, the concept of space that offers the most direct reply to the beauty-use dilemma in architecture. Is it possible to conceive of a useless space — to think of a house, a school, or a temple except in terms of a humanity that will enjoy it, inhabit it, and give it life? Anyone who prefers a deserted acropolis, a cathedral without worshippers, a movie house without an audience, or a perennially deserted square is affected by a morbid complex. An armchair that does not presuppose the function of providing a seat is a "useless machine," a fleeting diversion, psychologically symptomatic but artistically insignificant. One poet may be judged greater than another because his human experience and his system of values are more profound. In architecture, too, the great artist is above all a great man, one who represents the world, society, and life in his creation of space. If his own life is bound by economic concerns, the space he creates will be merely physical. If he draws from life a message or a dream, his work will be both useful and expressive.

It has already been observed that the professional architect distrusts the critic who studies his work from the abstract-figural point of view. Between the critic's approach and his own experience he finds an unbridgeable gap, for only rarely does the historian concentrate on space and thus on architectural content and the transitions through which it is represented. The photographs of significant buildings reproduced in books favor a taste for architecture as an inanimate object, as a portion of static and isolated space, as a box placed on a void, lacking any content, significance, or human involvement, as a memory, a romantic nostalgia for a lost world, not as the "empty alive" of the highly civilized Japanese, but only as emptiness, a negation. In this schizophrenic view of architecture modern utilitarianism understandably leads to boredom, and only the past succeeds in arousing emotion. Once the balance, the exchange, the sympathy between the individual and society are broken, the artist speaks only to himself, and the critic communicates only with inanimate objects. Architecture is like music in this respect — in order to live, it must be interpreted. Taste changes, and so does the interpretation. A building is used, enjoyed, and vitalized in many different ways over the centuries. It can be used functionally, psychologically, or spiritually — as a house, a museum, or a memento — but if it ceases to be useful, it is abandoned and torn down. It must be conceded, however, that even today the useful does not unconditionally dominate building activity, that it leaves a certain right of access to beauty and art. The problem for the critic is to encompass the entire historical panorama of architecture, from the cave to contemporary structures, by reinterpreting it on the basis of use, of society as a whole, or — to put it briefly — on the basis of space, where form and content meet.

The traditional concept of architecture as an object, as a plastic, empty box, has been vigorously opposed by modern critics and architects. Le Corbusier asserted that "the plan is the generator of architecture." What is the plan? A projection of human functions. Scholars slowly agreed, and current books in the field include at least some plans of the buildings illustrated, together with some comment. The notes, however, are often merely extrinsic and factual, wholly separated from their critical context. The mechanical addition of discussions of the plan to those of the façade does not yield architectural reality but only two abstractions. One is functional in the most material sense of the word, and the other formalist. The symbiosis, the integrating spark, does not occur. It is provided only by the indivisible space in horizontal and vertical projections, in perspectives, isometric drawings from above and below, and cannot be represented by photographs or even by moving pictures. The inability to represent space by conventional means is perhaps the basic cause for the widespread indifference to the original experience of architecture.

In view of the preceding considerations, the problem of economic limitations takes on an entirely different significance from what it has had traditionally. It does not imply that artistic production in architecture is quantitatively inferior to that of the other arts or that the profession of architect is unfortunate because of the dependences on client and builder or that we should create a hypothetical history of "lost opportunities," of real but nonproductive architects, of buildings planned and not executed. On the contrary, the economic restrictions, once openly recognized instead of admitted with reluctance, encourage a new approach to architectural history based on the direct connection between form and content.

As we observed in the first part of this essay, the concept of space intuitively recognized by many philosophers and theorists of antiquity has been slowly clarified during the past few decades. Two massive interpretations have retarded its total definition and have engaged the efforts of many historians and theorists: the functional, which analyzes only the utilitarian aspects of a building, and the formal, which examines only the proportions and plastic qualities. These two incongruous positions have given rise to two unrelated histories, which are often separated but more often illogically juxtaposed. They can now be brought together in a synthesis: economy becomes

"spatial economy," and form becomes a function of the spatial representation of the content.

The difference between building and architecture does not consist in the fact that the first is "not free" and the second "free"; the first useful and the second superfluous; the first concerned with the construction of simple dwellings, factories, hospitals, and commercial buildings and the second dedicated to memorials, cathedrals, and public monuments. It can be said, with no paradox intended, that architecture is the most useful form of building in that it has a psychological and spiritual function in addition to its practical aims and technical organization. Lomazzo, Lodoli, and Viollet-le-Duc were perfectly correct when they asserted, with philosophical naïveté, that architectural beauty is derived from the useful. Past and present experience confirms the fact that no ugly building is functionally satisfactory. Behind every example of formal poverty there lies hidden an economic-spatial error. Hence the procedure of the architect, which moves from content to form, can be reversed by the critic, who may use the spatial form to identify the content. It is not true that the construction by speculators that is invading the suburbs is esthetically horrible but economically logical. It is not economical from an urban point of view, and the living space it provides is ugly. If anonymous rural houses are attractive, it is not because they are picturesque or academically proportioned but because their function is translated into a coherent sequence of spaces, both economical and beautiful.

The history of the ugly in architecture coincides with the history of the useless and uneconomical. The Victor Emmanuel monument in Rome is repulsive not so much because Sacconi was not an artist as because it fails from the city-planning and spatial point of view. It does not fulfill a vital function; it is both too large and too small. It is a "useless machine," an eyesore, devoid of cleverness and without head or tail.

Why is it that most buildings seem, as Alberti said, so "stupid and witless"? The reason is clear; they were not rigorously thought out in spatially functional, psychologically coherent, or spiritually significant terms. A generic form was given to a generic content. The architect had nothing to say and did not even know how to speak. A three-and-a-half-room apartment is advertised. But what is a room? Is it an empty space with a floor 9×12 , 12×12 , or 12×14 ft.? More or less. How high will it be, $7\frac{1}{2}$, 8, or 9 ft.? More or less. Will it be regular or prismatic in form? More or less. Will the window be in the center of the wall or opposite the entry door? More or less. Will it turn out as architecture? More or less. Without a social conscience, without a broadening of the content, without a study of human functions, the spaces will become empty little cells that are insipid, in fact "stupid and witless"; because they are not congruous with any pattern of living, they cannot be art. If the architect has such a detached attitude toward the world that he cannot impose a character and personality upon it, he cannot be called "free"; he is simply sluggish.

The economic aspect of building activity is therefore not extrinsically determined; it does not belong to a history outside art history, as some idealists would have it, and it does not suffocate or eliminate the artistic personality, as some positivists would have it. The personal interpretation of the content, the building program, constitutes the first act of architectural creation, and it is immediately projected in a spatial vision. The useful and the beautiful, content and form meet in space.

Art and technique. In the composite triad of Vitruvius, which has been paraphrased with surprising monotony by centuries of theorists and historians, the concept of *utilitas* has often been overlooked. The component of *firmitas*, however, has been very much present and, in technical positivism, has appeared as the dominant characteristic of architecture. It would therefore be well to discuss it analytically.

The fallacy in the technicist interpretation of architecture lies in the assumption that the science of construction, drawn from building experience and mathematical calculations, supplies unequivocal and peremptory solutions to problems of statics. This hypothesis cannot be verified in any period of history.

In the antique period the margin of approximation, and hence of static security, is enormous; in the modern period the theories of elasticity have demonstrated that the resistance of materials varies according to the form of the structure in which they are used. This principle, which was already quite evident in the past, particularly in such structures as domes and vaults, now permeates the entire science of construction. As a result, the invention of a structural technique follows a precise artistic law: it is created by an intuitive process, and only later is it controlled by mathematical calculations. When this is not possible, it is controlled by means of models subjected to suitable forces. In a hyperstatic structure the same material offers widely differing resistances, depending on the section, the profile, and the dimensions. Its form cannot be derived by calculation, and only rarely can it be proved by means of mathematical instruments. It must be tried in practice in order to be controlled empirically. Thus the engineering process can be identified with the esthetic.

The technical limits on which most traditional historians insist, as on an objective reality that mortgages the fancy of the artist, do not appear to be qualitatively or quantitatively determined. Every art has its "limits." Building technique has neither favored nor impeded the development of art. In some periods technical inventiveness has been so overwhelming that it appears to dominate formal interests. In fact, it embodies the true formal involvement, as can be seen by analyzing a Roman tomb, a Gothic cathedral, Brunelleschi's dome, Guarini's structures, Freyssinet's hangars, or Robert Maillart's bridges (PLS. 413-415). The technician historian turns with particular fondness to these periods. He unnaturally disassociates structural interests from the universal history of architecture and traces the history of Roman vaults or domes, of the Gothic cage, or of the modern skeletal construction. This so-called "history of structural engineering," though often fascinating, is also distracting — not only in comparison with architectural history but in its own terms. Technique becomes a myth, a self-sufficient entity that develops according to its own laws. The architect becomes its passive instrument and it controls the whole of architectural creation.

The technician position gives rise to three methodological difficulties. (1) The postulate of "constructional progress" leads to the idea of "artistic progress," so that the history of engineering is shot through with evolutionary positivism. (2) Periods and artists that did not stress structural concerns are devalued. In this view the milestones of architectural progress are the ancient Roman period, the Gothic, certain aspects of the baroque, and finally the era of construction in iron, steel, and reinforced concrete; the early Middle Ages, the Romanesque period, and the Renaissance are considered as phases of either "preparation" or "decadence." (3) Within a given period or among the achievements of a particular artist, those works are judged best in which technical boldness is greatest. These difficulties stem from an erroneous history of technique and, consequently, from an incorrect view of the relation between construction and architecture, between static and formal thinking. *Firmitas* and *venustas*, like *utilitas* and *venustas*, are unified in spatial experience. Here it can be proved that the simple structural "invention" does not generally succeed in permeating architecture in its entirety.

A technical discovery, a new material, or a new method of construction can stimulate the architect's fancy; if, however, he uses an image simply to demonstrate a technique, the structural invention fails to become part of the architectural organism but remains incongruous to it; the result degenerates into virtuosity, and the taste for the marvelous stifles expression. The knowledge of domes and vaults was foreign to Greek and Egyptian art. In many Gothic churches the preference for linear tensions enlarges or blends with the spatial organization. In some of Guarini's works the interior structure is not successfully carried to the point of merging with the mural shell. The modern period, which gave rise to the professional schism between architect and engineer, has seen the multiplication of "structural inventors" who are not, or at least are not always, architects (PLS. 413-415).

During the past century several discoveries of fundamental importance in architectural history were made by engineers — notably Paxton, Eiffel, Freyssinet, and P. L. Nervi. "In the 19th century," Giedion wrote, "construction was the sub-consciousness of architecture." This brilliant definition can be extended to earlier periods, particularly to ancient Rome. It must be noted, however, that the engineer's creation, precisely because it is unconscious, rarely reaches the artistic level; it does so, in fact, only in those works in which the spatial and volumetric image is completely prefigured by the structure, as is often, but not always, the case in bridges, hangars, and metal towers. Failure to make the transition from "sub-consciousness" to "expression" creates the strange discord, so frequently seen in the work of engineers, between boldness of structural conception and timidity of formal details.

Among the works of Gustave Eiffel, the Maria Pia Bridge over the Douro in Portugal is surely an artistic achievement, for the piers and the arches vitalize the landscape with a rhythm that requires no further plastic elaboration. In many other structures, however, including the famous Garabit Viaduct, the supporting piers for the metal frame become essentially compositional points and not solutions. As for the famous Tower of 1889, Eiffel frankly modified the calculations of the engineer in favor of form. The four arches that seem to support the immense obelisk are purely design elements. They support nothing; in fact they are themselves supported by the piers. They serve as a linear recall of "figurative statics," which was required by the taste of the time, but they are quite counter to so-called "structural truth." The artistic quality of Robert Maillart's work is similarly varied. Creative genius is clearly evident in some of his bridges, particularly those, like the one over the Salginatobel, in which structure is wedded directly to the landscape without intermediaries. Other works, however, are decidedly inferior — the bridge over the Aar at Aarburg, for example, or the bridge over the Engestligen, where the relation between the thin sheet of reinforced concrete and the masonry haunches is most unfortunate. Maillart is scarcely recognizable in his industrial buildings because the structural elements, even when they are as beautiful as the mushroom columns in the Federal Grain Depots at Altdorf, create spatial rhythms that have no conclusion. Nervi's production is also uneven. His geodetic hangar at Orbello of 1938 reached a high creative point that he has not attained again, not even in the extraordinary covering of the Salone di Torino (Exposition of 1948-50). Here the building does not bind the space but is itself bound to a preordained organization seen in the incongruous apex at the back.

Although there are many splendid structural moments in modern building, they rarely succeed in giving form to the whole of the organism and raising it to the level of architecture. Why is this? In the visual result, is the structure simply a plastic attribute, a qualification of space that does not determine its total reality? To resolve the question, one need only think of the experience of mounting the Eiffel Tower or of crossing one of D. B. Steinman's suspension bridges — the Mount Hope Bridge in Rhode Island or the St. John's Bridge in Portland, Oregon. These structures are spatial not only in the way they impinge on the landscape but also, and particularly, in their voids. They offer an open space, enclosed by a transparent skeleton made of points and directions of juncture, by a very fine net of force lines that dynamically support the interior. They are like completely unfenestrated environments open to the sky but, for all this, no less enclosed and separated from the natural surroundings. Because of this interior human reality, they are properly architectural spaces; they bear the same relation to the plastic "spaces" of Pevsner, Gabo, or Calder as the space of Brunelleschi does to that of Donatello, the space of Bernini to that of the Carracci, the space of Borromini to that of Caravaggio. It is a question of specifically architectural phenomena within the context of the direction common to all the visual arts.

The problem becomes more complex when structure does not dominate architecture — when it does not create a plastically integrated void with its multidirectional and three-dimen-

sional webs and its network of broken lines, but must be surrounded, without being submerged and hidden, by a continuous wall. This is an ancient compositional problem. The Romans encountered it when they tried to close Greek colonnades. Gothic masters faced it in attempting to raise the cathedral without breaking their dream of a continuous space, "measured" but not interrupted by a skeleton of lines. Modern architects meet it in designing buildings with visible supports. The solutions proposed down through the centuries fall into three broad categories. (1) The structure fixed in the wall becomes a constructional presence, frequently a projection of interior spatial divisions on the plane of the façade; its value is plastic; hence the "figurative structure" does not necessarily reflect the static structure. (2) The skeleton remains in view and takes over the visual of resistance. Then the problem of composition is reversed. It is necessary to mediate between the lines of force with a connective material, with framed or projecting surfaces, decorated windows, or panels of glass. (3) The structure is freed from the spatial containing element and articulates it with a rhythm of lines. The first solution was adopted by the Romans and, in a slightly different fashion, by the architects of the Renaissance; the second was accepted by Gothic artists and modern structuralists; and the third by neoplastic architects.

In each case the solution is difficult, and a more comprehensive genius than that of the engineer is required to ensure that a potentially beautiful structure does not become bad architecture and to establish a unifying relation between bearing members and filling. Such a challenge calls for an artist capable of making a choice, of refusing to use an instrument or structural system that appears inappropriate, that does not seem an inherent demand of the building. The architects of the Renaissance had the courage to abandon the magnificent structure created by Gothic art. During his European period Mies van der Rohe chose a vocabulary of free planes, of diaphragms that canalized a flowing space, and made the structure submit to this neoplastic vision. Later, in the United States, he adopted the steel skeleton, and the structural and neoplastic dilemma dissolved. He renounced neoplasticism and began to approach a totally structural image. At this point he launched his famous epigram, "Less is more." Thus Mies became the greatest modern structural architect, but not because he applied the boldest constructional methods to his skyscrapers. His structures are devoid of any virtuosity, but they do constitute a spatial conception, and for this reason they are art.

These considerations indicate the inconsistency inherent in the definition "architecture = art and technique," or "art and the science of construction." First of all, structural invention, technical intuition, and a feeling for statics can be identified with formal intuition and artistic sensibility. In the second place, whenever there is a schism between engineering and architecture, the building is a failure; the engineering facet may be interesting, like a fine fresco in an ugly house, but it cannot overcome spatial poverty. Although the genius of architecture cannot properly be distinguished from the genius of structure one might say that the first includes the second but that the second does not wholly encompass the first. Not only does structural invention escape the presumed dictates of science and mathematical calculation, but a more advanced technique does not necessarily produce better architecture. Every architect forges his own technique in response to expressive demands, not according to the rules of manuals or the spectacular discoveries of engineering.

To subsume the history of constructional technique under the history of architecture does not diminish its importance but, rather, emphasizes it by liberating it from evolutionary preconceptions. Problems of construction accompany the active building process, from laying the foundation to applying the sheathing, clearly indicating the difference between architecture and project, neither of which can be separated from spatial reality. Analysis of the constructive phases of a building is indispensable to a dynamic and critical reading. In this sense the so-called "history of engineering" is not a distinct chapter of architectural history but an intrinsic, necessary part of the whole; if it is to be treated historically, however, the

engineering phase must be identified with artistic history. It is still a long way from this methodologically clear and objective point of view to praxis, as indicated by the common belief that the same artistic result can be obtained by widely differing constructional methods.

The restoration of ancient monuments suffers from this misconception, with the result that the works to be reconstructed or saved are often substantially altered. To consider an architectural work apart from its peculiar constructive process means to consider only its formalistic exterior. To restore a monument by covering a new reinforced concrete or steel structure with the wood, stucco, or stone of the original building is an act of cultural immaturity; it is sometimes pitiful, always illusory, and often pretentiously vulgar. The reconstruction of the Bridge of Sta Trinita in Florence offers a classic example of this problem, for the engineers and historians involved in the project battled long and hard over the methods to be used. The engineers, who wished to rebuild the interior structure with reinforced concrete, thought it absurd, even mad, to attempt to employ the techniques used four centuries earlier by Ammannati. The historians, aware that a work of art is a process, wished to respect its genetic laws and to undertake an "archaeological" chore by rebuilding the bridge with the tools, the patience, the sensibility, and the technical intuitions of those who had constructed it in 1569. This time the historians won out. Compared with other restorations and reconstructions, the Bridge of Sta Trinita is an index of a high cultural level that has conquered the ancient dualism of technique and art and, in a single process, blended the two extremes into history.

Building typology. The difficulties inherent in the influence of the environment on architecture, the problem of architectural authorship, the vast body of anonymous building, and the importance of economic and technical factors — all subjects that we have examined — have led many historians to hypothesize that architecture is a suprapersonal activity operating according to rigid schemes derived from the development of so-called "typology." All the most *retardataire* concepts of history — from the evolutionary to the biological, which postulates the birth, maturity, and decadence of formal styles — are expressed in typology.

The typological misconception has several aspects: the constructional, the functional, and the visual, as well as various combined forms. We have already discussed constructional typology, demonstrating that a study of buildings with domes, with steel skeletons, or with reinforced concrete fails to treat the technique historically and tends to abstract structure from architecture.

Functional typology probably represents the most urgent problem. It is quite rare to find a discussion of Greek architecture that does not isolate temples from other structures, a medieval architectural history that does not distinguish between religious and civil construction, or an analysis of the Early Christian and Renaissance periods that does not separate central-plan churches from those with a longitudinal plan.

The typological distinction between longitudinal and central schemes reflects not only a functional aspect, dictated by liturgical requirements, but also constructional aspects, generally determined by systems of roofing, and formal aspects. In the modern world, however, the functional aspect dominates typology. The proliferation of specialized buildings — hospitals, markets, office buildings, schools at various levels and with different educational aims, industrial buildings of all sorts, laboratories, community centers, and the like — has led to a professional specialization, to "hospital architects," "store architects," and "house architects."

The increasingly complex and diversified functional demands have encouraged a textbook presentation of distributive schemes, of diagrams showing the disposition of the parts of the building organism, the most useful procedures, and the most carefully studied forms. These diagrams, which are almost always two-dimensional, are periodically reproduced and surrounded with walls, thus fostering a mannered formalism

and the dullest sort of professional craftsmanship. The old formal academy that taught how to transform a given structure into Gothic, baroque, or modern "style" has been replaced by another academy, which is no less dogmatic and abstract despite its appearance of practicality and rationality. Current architectural publications abound in special issues dedicated to schools, country houses, hospitals, sports centers, kitchens, atomic centers. These modern categories are not unlike the old typological classifications of baptisteries, churches, and palaces, or apses, columns, ciboria, and capitals.

Now the task of architectural history is to overcome generic typology and individualize the masters and their works. Buildings can be used as sociological documents, but in order to trace their history one must recognize that the art is always antitypological, in that an architect, even when assimilating a preexisting "schema," re-elaborates it according to his own interpretation. Brunelleschi's Pazzi Chapel is a central-plan structure, but it is more closely related to S. Lorenzo and Santo Spirito than to other central-plan buildings of the early Renaissance. There is a stronger connection between a house and a hospital by Alvar Aalto than there is between a hospital by Aalto and one by Neutra. As indicated in our discussion of "spatial economy," functionalism is not a rigid, inflexible, and mathematically calculable norm. If the same industrial products can be presented in various forms, all equally logical, then this is even more true of buildings, which must fulfill not only mechanical but also social and psychological demands. Even in confronting what would appear to be the most restrictive practical problems, the architect is not the tool of the type of building; he interprets and represents its functions spatially.

The question of "artistic forms," whether organic or abstract, is raised again within the framework of representational typology. In some periods, it has been asserted, naturalism prevailed, in others geometric art. The two tendencies are derived from two different visions of the world — the one practical, the other metaphysical. In the Paleolithic period the preference for organic art stemmed from the belief in practical magic. Abstract geometric art, however, prevailed in the Neolithic period, in connection with the animistic conceptions of the agricultural societies of Mesopotamia, Egypt, and China. The transition from organic or naturalistic forms to abstract or geometric forms is due either to negative or to positive causes: to attrition or exhaustion of naturalistic forms or to the demand for rigor and for a synthesis that, once freed from the function of representing the object, brings together masses, volumes, spaces, and lines.

Archaic Greece, from 650 to 480 B.C., carried on the drive toward abstraction of the Neolithic and post-Neolithic Mediterranean world, which had reached its high point in the nonfigural, geometric style of the 9th and 8th centuries. This style, however, did not completely escape reality; it was, in fact, so rigorous and rational that it quickly destroyed itself and turned again into naturalism. According to this argument, the Greek civilization was among those most concerned with organic form. The ideal of Greek art as a supernatural, impersonal, and abstract language is simply a myth derived from the esthetic mysticism of Winckelmann and his followers, who postulated an academic "absolute beauty" on the basis of Roman copies of sculpture (which were abstract and "decadent"), thus reducing the whole of Hellenic experience to the "neo-Attic" current and confusing classicism with neoclassic ideals. Greek rational naturalism, which was dominant in the works produced between 480 and 450 B.C., continued with varying degrees of intensity into late antiquity, when it assisted at the birth of a new *Kunstwollen*, in which space was defined more by light than by lines or volumes, by color rather than by plasticity, and the conquest of three-dimensionality and of empirical perspective was thus annulled. The ideological superstructure of this artistic vision, continues the argument, was expressed in the evasions of Plotinus's Neoplatonism and the new force of mystery religions, which constitute the psychological "compensation" of an economically ruined society. It was expressed as well in an abstract and transcendent space. The syntactical

coordination of plastic elements and spatial "quantities" was abandoned, illusionistic space was substituted for the ideal of objective space, and organic form was cast aside.

In this view of ethnic substructure the organic tendency was accentuated in the Mediterranean region, and the abstract prevailed in the area of Central and Western Europe to which the Etruscan-Italic world belonged until its contact with Greece. The irrational and abstract position characterized barbaric cultures and also represented a component of the Christian world from the 4th century to the Romanesque period. Naturalism and abstractionism found a happy synthesis in the Gothic period, and realism dominated the Renaissance because of the ideological superstructure of its mercantile society. Examined from the political point of view, a preference for the organic in art has been said to accompany the breakdown of a theocracy. It did, in fact, appear in Egypt during the brief religious revolution of Amenhotep IV and in Greece during the "democratic" phase following the tyrannies of the archaic period. On the technical level, abstraction would signify the corruption of structural methods; finally, on the psychological level, it would imply the renunciation of artistic individuality and expressive variety in favor of the search for perfect form, immobile and geometrically crystallized.

This complex typological-figural system, already inherent in the history of "styles" and of "artistic forms," that is, in the mythological and categorical histories of the 19th century, has been more recently championed, and with considerably greater clarity and intelligence, by scholars such as Ranuccio Bianchi Bandinelli. It is, however, based on an analysis of prehistoric art, on painting and sculpture, and is only artificially applicable in the field of architecture. This indicates that it is not a valid argument and that the proposed typological schemes, though often intellectually stimulating, are fallacious oversimplifications.

An architectural "organicness" does not, in fact, correspond to a naturalistic variety in the golden age of Greece. The organism of the temples was crystallized in the 5th century, and the temples themselves came to dominate the Hippodamean schemes of city planning. If it is possible to speak of abstractionism and inflexible organization in architecture, the Greek temple, however much enlivened by chromatic decorations, is certainly the symbol. It is an indisputable phenomenon proving that rationality and abstractionism are not antithetical — not even if "rationality" is here taken to mean only the concrete rationality that is bound to the understanding of reality and not the formally rational logic that serves an essentially metaphysical concept, basically irrational, transcendental, and mystic.

Although there can be no doubt, moreover, that illusionistic space triumphed over plastic space during the crises of Roman society, to characterize all medieval art up to the beginning of the Gothic period as "escapist" and "transcendent" is unacceptable from an architectural point of view. It was during the Middle Ages that the foundation of monastic and secular agricultural communities, the forerunners of the cities, encouraged a notably organic spatial language that was particularly close to reality. The hypothetical balance between "abstraction" and "naturalism" in the Gothic world can be fully documented in the architecture of the early Middle Ages and the Romanesque period.

As for the Renaissance, a "rationality" that signifies a new possession of the world is said to be in force; yet it is not wholly immune from a current of intellectualism that implicitly avoids the organic in the search for perfect proportions, the ideal of absolute beauty, and the dream of a building wholly determined by the formal and autonomous principles of the content. Alongside Michelozzo's attempts to humanize, amplify, and popularize the language of Brunelleschi, we find the cold search for a canon, for academic conformity.

Finally, in the modern period architectural "rationalism," which is closely bound to abstractionism, is anything but an escape. It is also opposed to the decorative space of Art Nouveau, which reflected an immanent view of life.

The organic movement that follows rationalism advocates a further investigation of reality and hence a more individualized

qualification of language, but to propose that it can be assimilated in a return to naturalism is completely idiotic. Quite the reverse has occurred in the past. Soviet realism — which is allied to the representational, particularly as a basis for propaganda — appears in architecture as the most vulgar neoclassic escapism, full of aberrations in columns, stairs, and marble decoration. It is the thundering explosion of a collective inferiority complex.

Such observations show that the organic and the abstract do not occur in the rigid and binding chronological sequence proposed in typological theory. The coexistence of abstract and organic tendencies in the contemporary world is not exceptional, and hence it is not symptomatic of any particular cultural confusion. It can be found throughout history, within the framework of many different vocabularies. It is not correct, moreover, to assert that geometric art, which crystallizes forms and repeats them in a routinely impersonal manner, is more likely than organic art to encourage copying and to lead to the mechanical desiccation of the individual imagination. As a matter of fact, the abstract tendencies — or rational tendencies, as they are called with some reason in architecture — and the realist, or organic, tendencies represent the truly creative elements in the history of building.

Against a disorganized, arbitrary, cynical, or fatuous empiricism the artists oppose rationalism, order, a universal and accepted language, a formal vocabulary reduced to the point where it is capable of overcoming eclecticism. This is the battle of the Greek architects of the 6th and 5th centuries against the decadent inheritance from the Cretan-Mycenaean world and the archaic period, the struggle of Roman culture against Italic-Etruscan empiricism, Brunelleschi's methods opposed to the morphological encyclopedia of the Middle Ages, Gropius and Le Corbusier against "revivals" and Art Nouveau.

When rationality has conquered, however, and when the taste for elementary geometric forms no longer indicates a process of simplification and synthesis but merely becomes part of an academic game, at the instant when stylistic agreement falls into compositional dogmatism, then the organic tendency emerges in the name of an expressive humanization, closer adherence to social content, and a more articulated psychological and spiritual functionalism and advocates a new adventure and enrichment of the language against the cold and sterile utilitarianism of stereotyped forms. The theme of interior space proposes an opening of finite, closed, and rationally calculated spaces, a deeper awareness of the separation between physical and artistic space, and this in turn leads to an illusionistic experience and to renewed relations between the building and nature. This movement is reflected in the scenographic revolution at Pergamon and the struggle of the Hellenistic period in general against the dogmatism of Greek classicism; in the great chapter of the late-antique period that dilated the closed spaces of Rome; in Byzantine illusionism; in the disquieting dualism of horizontal and vertical perspective in the Gothic age; in the interpenetration and rarefaction of spaces in the baroque; in the romantic movements of the 19th century, which came after neoclassicism; in Wright's preference for the organic, which overcame the rationalism of Sullivan and the Chicago school; and, finally, in the organic movement in Europe that, after 1950, humanized the bare equations of Le Corbusier and the Bauhaus.

These "poetic" tendencies — whether symbolic of oligarchical or democratic regimes, of statism or the rights of the citizens, of the uniformity of an industrial world or militant individualism, of psychological control or the liberation of feelings and instincts — have inflamed both the artists and the critics who have allied themselves with one side or the other. The battles between various "poetics," however, do not provide the frameworks for systematic historical deduction in either a chronological or a symbolic sense. The abstract does not necessarily follow the organic, nor does the reverse hold true, but both are ever-recurring aspects in the development of art. As soon as we leave the generic approach to "periods" and "styles" and turn toward the real history of architects, we quickly find an organic tendency in Greece and in the Renaissance

as well as an abstract current in the late-antique and baroque. Abstractionism, moreover, does not signify compositional rigor, nor does the organic imply uncontrolled vital impulses. Borromini and Wright are among the most rigorous artists in history, and if there is a monument capable of demonstrating the union of rigor and artistic passion it is St. Sophia in Constantinople. As for the relations between society and formal superstructure, it is pointless to search for a valid formula that would include all analogous abstract and organic phenomena. The grid system of city planning was long considered the symbol of Roman militarism or of dictatorial political and social organizations. In Tell el 'Amarna in Egypt, however, it signified a revolt from an immobile theocratic world; and in Hippodamean Greece it represented democratic victory. The displacement of the urban center from the Acropolis to the Agora symbolized the triumph of the people over the tyrant. Finally, it should be added, the supposed relationship between abstraction and technical decadence is refuted by the fact that the late-antique and the baroque periods saw considerable progress both in mathematical calculation and in the science of constructing vaults and cupolas.

However interpreted, visual typology has no more importance than technicist or functional typology. The argument that medieval architecture was wholly inspired by transcendentalism and illusionistic space disregards the urban planning of the period, which is among the most realistic in history. The attempt to localize perfected organic art in classic Greece is especially absurd, as stated above, within the context of an architecture dominated by the formal crystallization of temples and urban schemes. We must, therefore, conclude that the organic and the abstract — or, in architectural terms, organic tendencies and rational currents — are both aspects, or stable moments, of every culture. To refute this typological misconception in the field of history requires only two operations: (1) a demonstration that the rational and the abstract are blended in every authentic work of art, that individual imagination underlies apparent stylistic objectivity just as method and reason reinforce a seemingly arbitrary, instinctive, and personalized vision; (2) destruction of the myth of organic or rational cultures by a better analysis of the historical data.

One of the most tenacious myths in the history of architecture concerns the grid-plan city. Hippodamos of Miletos has been considered not as a well-defined artistic figure, as the planner of the reconstruction of the Piraeus, of Thurii, and of Rhodes, but rather as the symbol of all the rectangular schemes for Greek cities, beginning with Miletos and Olynthos, that arose after the Persian destruction of 494. This is not all. These 5th-century cities have been related to examples of rectangular organization far beyond the Greek world, and precedents have been found at Kahun and Tell el 'Amarna in Egypt. In a blind attempt to establish a unilateral typology, these cities were then connected to the remains of prehistory, to the Terramare culture, Villanovian Bologna, and "square" Rome. As if this were not enough, the Aztec city of Tenochtitlán, old Peking, and the modern colonial cities of Buenos Aires, Lima, and Philadelphia were inserted into the same typological category.

This entire imaginative structure has gradually begun to disintegrate. The rectangularity of the Terramare settlements, Bologna, and "square" Rome has been disproved. It has become clear that such cities as Kahun and Tell el 'Amarna have nothing in common with the Hippodamean scheme, because they are not concerned with an over-all governing plan enclosed within a boundary wall. According to Castagnoli, the Roman grid cities can be subdivided into five different types: those of Hippodamean origin, those with crossed axes, those with an axial plan showing the influence of the camp, those with an axial plan and divisions by moats, and finally the camp proper. This classification can probably be even further subdivided by taking into account the elevations as well as the plans. Thus the "Hippodamean" typology has been slowly challenged and broken down into specific historical phenomena.

The techniques of modern archaeology, effective in discrediting Winckelmann's typological system and the myth of a

uniform grid system of city planning, are now being applied to the entire history of architecture. The spatial expression of Greek temples, long the trump card of typologists, has been under attack. Even in this area creative work has been uncovered and the genuine image distinguished from the banal copy, poetry from prose. The temples have begun to be characterized from the point of view of city planning; it has been found that proportions are related to human functions, and thus the ever-changing appearance of the peristyles, which offer the most interesting interior space of the temples, has been captured. Not only the form of the columns but the intervening space has been analyzed, and, generally speaking, the *diastema* indicates the personality of the space more than the *choros*. Different modes of plastic treatment have been distinguished in details. The effect of the landscape on the temple is of fundamental importance in the search for authorship, and one of its aspects is the relation between the material of the building and that of the terrain, which takes various forms in the acropolises of the colonies but which at Athens consists in the extraordinary interplay between the bare, harsh rock and the formal rigor of the Propylaea and the Parthenon. The cliff indicates not only the complex series of zigzags through which one views the building volumes from a varied succession of vantage points but also the slow and labored tempo of the climb. Thus every temple is different from every other because its urban or natural location is different, because there is a different interplay between the building volumes and the landscape, between the material of the structure and the material of nature. As for the space, particularly that of the peristyle, it is enough to compare the Parthenon with the Greek temples of southern Italy to demonstrate that each has a unique physiognomy, a distinctive appearance under light. Thus the dogmatic typology of Greek temples must be broken down into smaller subdivisions. Carried to the extreme, such an analysis would make it necessary to define a "style" for every artist, a "category" for every work of art, a "type" for every creative achievement. In a detailed examination, every real work of architecture would seem comparable only to itself.

Architectural theory and the creative personality. The search for an a priori idea that the building would in some way represent preoccupied the philosophers of antiquity, the theorists of the Renaissance, the scholars of the Enlightenment, and all those who were concerned with architectural problems during the 19th century. The persistence of this view is reflected in certain academic practices: the title "History and Styles of Architecture" is still applied to the course in architectural history offered in Italian universities, and the "theory of architecture" and the "history of architecture" are presented as two separate subjects in the universities of many other countries. What is this "theory," and how does it differ from "history"? What are the presumed "principles" of universal validity on which the theory is based? What are their origins and authority? If they have been deduced from the monuments of the past, by what right are they used in judging these monuments? Moreover, how can they be allowed to dominate future production, which will inevitably embody other principles?

From Plato on, the fact that architecture "neither imitates nor illustrates" has raised a problem of considerable importance. Plato stated in his *Politics* that architecture produces things that are not the images of real preexisting objects but that nonetheless exist. The architect makes a real house, but the painter can only represent it. Although from this point of view architecture is superior to the other arts, it is at the same time inferior, for it is enchained by practicality and the manual skills. How can the paradox be resolved? Plato postulated a distinction between "practical architecture," pertaining to construction, and "theoretical architecture," which participates in the sciences. This distinction has endured for centuries. Aristotle apparently excluded architecture from the arts, but he did recognize that its product is illumined by reason. He distinguished between the architect who "knows what he does" and the builder who "does without knowing." Plotinus was quite explicit on the subject: the building is an external

and corporeal object reflecting the interior form in the mind of the artist; architecture is the concrete manifestation of his "idea." For St. Augustine, as well, the artistic justification of architecture can be discovered in a sovereign, external, perfect, and original unity, which is the basic rule for beauty and which buildings variously represent. Thus there developed the myth of a "theoretical" architecture with an absolute interior form, a primordial norm, and an a priori compositional principle — a myth that is at the base of all academic searching. Vincent of Beauvais, in the 13th century, asserted: "Architectura nascitur ex fabrica et ratiocinatione. Fabrica est continuata et usu trita meditatio quae manibus perficitur. Ratiocinatio autem est quae res fabricatas solertiae ac rationis proportionem demonstrat et explicat." ("Architecture is born of constructing and of reasoning. A building is [like] a constant and long-practiced meditation carried out with the hands. Furthermore, theory is the demonstration and explanation of things constructed with the [right] proportion of skill and reason.") In 1584, Lomazzo wrote: "From the beginning the architect conceives the reason [*ragione*], which is a kind of idea of the building in his soul; then he builds the structure as well as he can according to its disposition in his mind." In 1672, Pietro Bellori added: "Philo says that God, as a good architect, observed the Idea and the examples before Him, and then constructed the sensible world from the ideal and intelligible world . . . We say that an architect should conceive a noble Idea and create a mind that will serve him for laws and rules, so that his inventions will consist of order, disposition, measure, and eurhythmy in the whole and all the parts." Scamozzi's convictions, as expressed in his *Idea dell'Architettura Universale*, have already been indicated in the discussion of projects and architecture.

Clearly the traditional definitions of architecture, cited in the first part of this article, and many of the historical problems already examined are reflected in the search for a priori laws. The economic interpretation attributes the genesis of architectural works to forces outside the artist — the demands of the client or the practical, psychological, or symbolic functions of the building determined by the social system. The theories that subordinate architecture to structural techniques — from Schopenhauer to Pugin and Viollet-le-Duc — see in this view a secure and "objective" *point d'appui*, a rationalism capable of governing artistic will. Critics who insist on typology and who narrowly define the evolution of "styles" attempt to establish a morphological law to determine the "choice" of architecture, thus imposing restraints much like those of the technicians. Typology has frequently been related to the historical environment — in Taine, Boutmy, Adamy, Ruskin, and Belcher — and often to the symbology of forms. In such cases the tendency is to trace architectural sources to the *milieu psychologique* or to allegorical expression. It has also been observed that the desire to identify architecture wholly with the project, or design, is associated with the hypothesis of an "interior design," which the real building echoes more or less faithfully. The studies of proportions, the "golden section," and regulatory grids and the formulations of the pure-visibility theory, physiopsychology, and semantics also tend to provide "objective" compositional laws that the architect must obey. In the history of criticism such "theories" have undeniably enriched research on the relations between architecture and society and on religious and linguistic aspects. Scholars such as Riegl, Wölfflin, Panofsky, Cassirer, Hildebrand, and others already cited are penetrating historians who have illuminated single artistic phenomena from such points of view. The search for a law of proportions or of "ways of seeing" inspired in them a genuine passion for the individual expressive fact and a desire to characterize it. But all theories, once separated from the author's sensitivity, which has frequently saved them from abstraction, contain the same shortcoming. The particular creative personality and the image of the single monument become mere links in an evolutionary chain forged by "objective motive forces," the "laws of harmony," and "systems of vision." Even in their more subtle, articulated, and brilliant forms, modern theories reflect the same misunderstanding that under-

lies academic instruction. They still search for "rules of the art," a means of interpreting architectural evolution and of dictating laws to govern future work. It must be reiterated that in critical practice analytical concepts and historical data are frequently brought together, with fruitful and sometimes surprising results, but in critical theory analysis is divorced from history, if not actually opposed to it, and becomes a reconstruction of concepts and formal changes that reproduce the misconceptions of the old differentiated styles.

Architectural theories still shape many modern monographs. Every architect is presented as a philosopher or a sophist; every monument is a pretext for explaining a "mode of seeing" or for devising a new spatial, plastic, or representational concept. As Berenson has ironically commented, these critics do not consider the work of art an object to enjoy, love, and devour, an eternal enrichment, but an opportunity to delight in their own acumen, subtlety, and dialectical ability. They generously invite us to share the pleasure they derive from displaying their talents, but unfortunately this is not what we ask of critics. They should make us think about the work of art and not about themselves.

It can be objected that generic theories would lose their value if critics, in an attempt to avoid the fallacies of generalization, were to go to the other extreme and create an individual expressive category, a "mode of seeing," for every artist and every image. The present exegetical task, in fact, is not to refute the contributions of the theorists — which are not easy to denigrate, as Berenson's own theories prove — but to bring them into historical focus and to make them specific on a level that is no longer heteroindividual, positivist-sociological, linguistic, or semantic. As noted in the first part of this essay, in the discussion of *Raumgestaltung*, the problem is not to set aside the spatial interpretations of Schmarsow, Soergel, and Adler — which would be antihistorical — but to raise them from the limbo of a superpersonal "category" to the reality of historical data — the architects and their specific works.

The dictatorial quality that lies concealed in what purport to be simply "theories" of architecture is apparent in the following quotation from one of their exponents, Leo Adler, in 1926: "What is the essence of architecture? That which is common to different historical forms . . . This common essence deduced from historical material must be carried over to morphology. It is necessary to rediscover the fundamental figures, the original forms, by abstracting them from their mutations. There is a difference between the science and the history of architecture. Alongside the history there should be a morphology, with scientifically achieved concepts, that would indicate the possibilities of architecture and provide a basis for the contemporary experience. The aim of morphological research, then, is the determination of all the concepts that concern architectural formation, without reference to their position in the course of history or of architectural events. The aim of architectural history is to retrace the historical relations between morphological principles. Morphology and history form a synthesis which is the theory of architecture." Adler is a latter-day representative of the 19th-century mentality, in a field of research that sets aside chronology and monuments to define the "concepts" of architectural formation and to legislate on the modern vocabulary of forms. Adler is completely sincere in explicitly declaring the finality of his investigations.

Ronald Bradbury, in 1934, was more cautious: "Architectural Theory . . . is a branch of philosophy and exists purely for the sake of knowledge and not as a guide to practice in the confined sense . . . The architectural theorist desires to understand the work of the architect, not in order to interfere with or to direct its production, but rather to satisfy an intellectual interest of his own. Architecture is the abstract embodiment of the philosophy, aims, and ideals of the social organization of the period which calls it into being. A knowledge of the theory or philosophy of architecture can never make an 'architect,' but it can, however, so govern the conscious thought of the individual that he may gradually come to a better understanding of the ever-developing desires and needs of humanity,

both physical and intellectual, which are the reasons for the continued evolution of the art. It will, therefore, be found almost impossible to divorce the history of the Theory of Architecture from practical and social considerations, for the evolution of speculative thought in architecture is mirrored to us in the development of executed architecture . . . The difference between Theory and History of Architecture is that the History of Architecture is the history of the actual esthetic consciousness revealed in concrete phenomena, while Architectural Theory is the philosophical analysis of this consciousness."

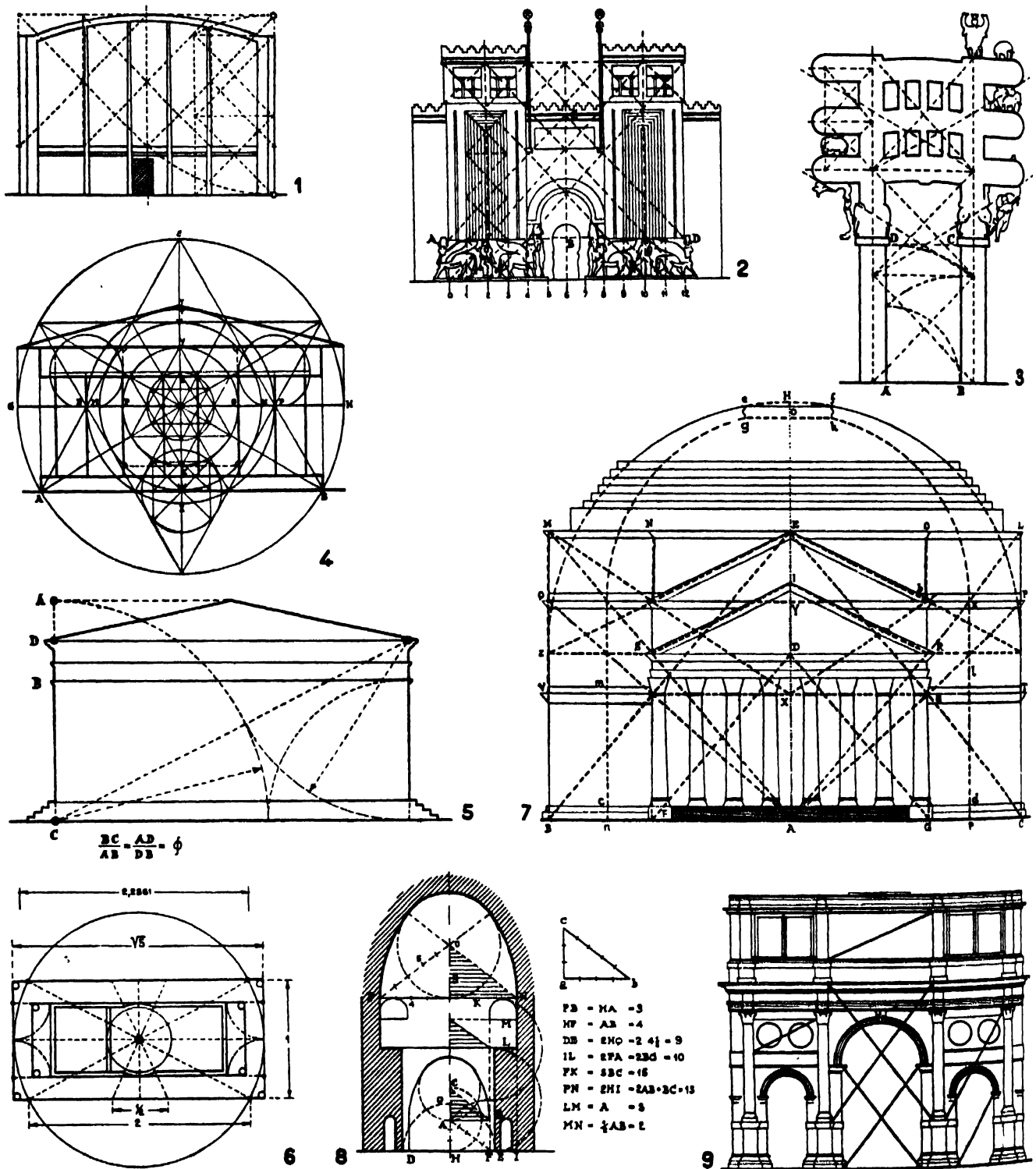
Despite its obvious didactic value, this generous concept of "theory" neither guided nor influenced architecture. Its only defect lies in its contradiction by all theorists, including those 19th-century writers Bradbury studied so diligently.

From Schopenhauer and Hegel to Vischer and Lotze, from Pugin and Gilbert Scott to Ruskin and Morris, from Viollet-le-Duc to France Leonce Reynaud, there was not a single "philosopher of architecture" during the heated 19th-century struggle for the moral supremacy of one style over the others who maintained impartiality in his speculations or who did not consider his theory perfectly suitable for the evaluation of both ancient and contemporary architecture. Schopenhauer, for example, asserted that the "unique and constant" theme of architecture is the struggle between weight and support: "Weight and support are certainly inherent in a dressed wall, only they are merged in one another. It is all weight and it is all support, however, and it has no aesthetic effect. This appears only with the separation of the two and is proportional to the degree of this separation." Thus Schopenhauer dictated a structuralist theory of creativity that spurned all other interpretations and exercised a profound influence on the architectural taste of his time.

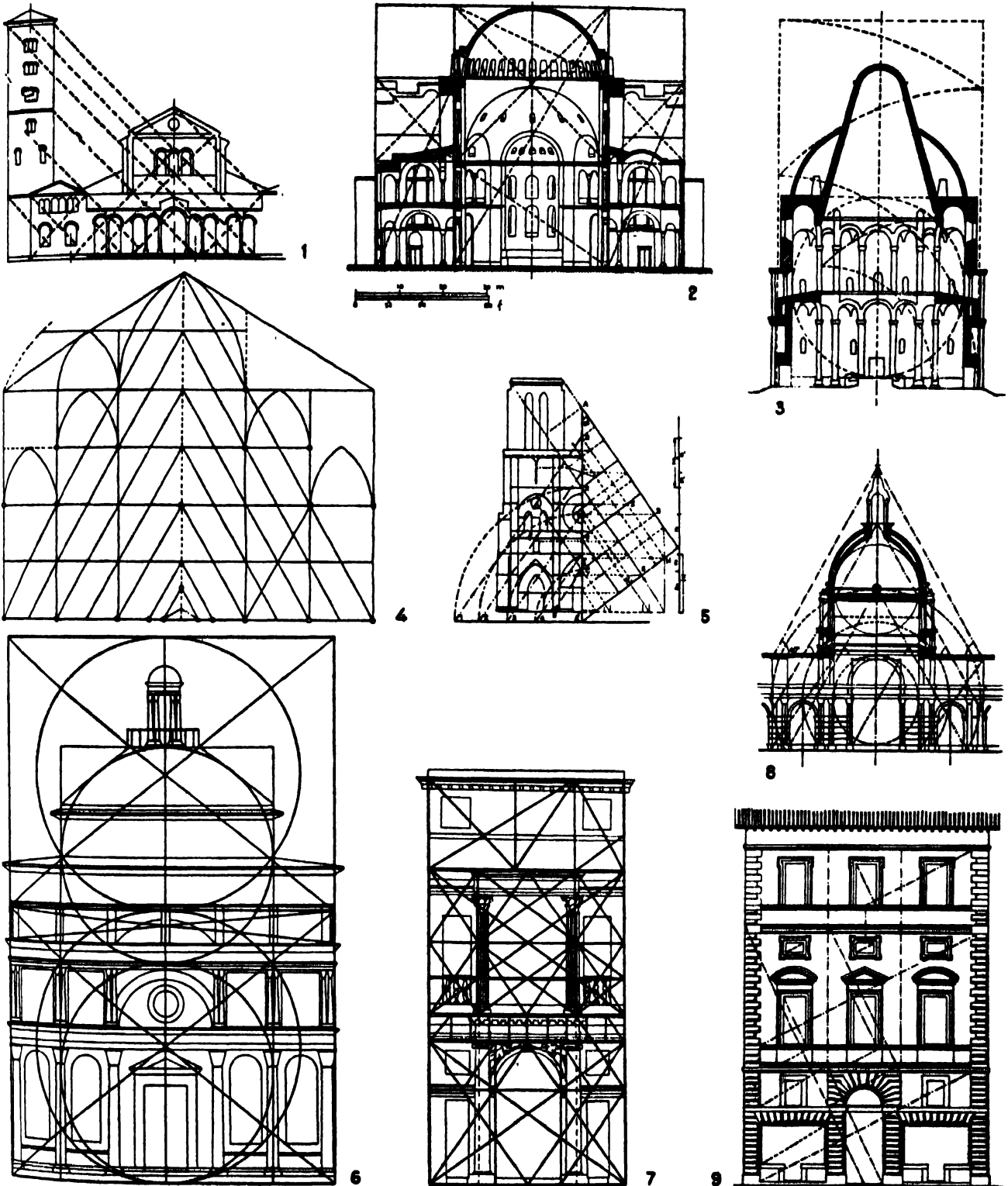
Herbert Read, who postulated the idea of the architectural monument as an autonomous object — the transfusion of a personality into an impersonal and timeless construction — was equally dogmatic in asserting that the architect should be a "universal man." He did not hesitate to oppose the age of "collective intuition" to that characterized by the individual capacities of a Brunelleschi, a Michelangelo, or a Borromini, but he rated Mies van der Rohe as the greatest contemporary architect, because, Read felt, his buildings clearly refute any suggestion that architecture has been used as the expressive language of an emotional or mental state. This evaluation places greater emphasis on Mies than on Wright, on geometrically crystallized form than on an individual creative aim. Anyone, of course, has a right to express this opinion, but only as historical judgment, not as a universal theory. In other words, that branch of "philosophy," as Bradbury called it, which attempts to analyze esthetic consciousness in architecture cannot exist as an independent activity but must coincide with the history of that consciousness, that is, with the history of architects.

Now that we have related economic and technical restrictions, along with typological and figural laws, to the personality of the artist and have resolved the "philosophy of architecture" in the history of architecture, one final problem remains, and this concerns the architect himself. In stressing the value of sociological, symbolic, and stylistic "laws" in architecture, it is natural to attempt to prove that the architect has only a minimal responsibility for the style of his work, since it is merely the fortuitous manifestation of an inevitable morphological evolution. The Victorian period and its major spokesman, Ruskin, celebrated the ritual sacrifice of the architect and decreed that the great periods of architecture, from the civilization of Mesopotamia to the Middle Ages, were anonymous and collective and that decadence began only with the emergence of the personality in the Renaissance. An entire sector of history was engaged in creating the cult of an architecture without architects — a cult that still finds unwitting adherents in the lovers of "minor," "rural," "native," or "spontaneous" buildings.

The Victorian line of reasoning on the role of the architect was typically categorical: primitive construction, from dolmens to huts, did not require an architect. In Egypt the



Geometrical and mathematical interpretations of buildings; studies of compositional principles in architecture. 1. Saqqara, Egypt, precinct of Zoser, façade of chapel. 2. Khorasabad, Iraq, entrance to Sargon's Palace, reconstruction. 3. Sanchi, India, the Great Stupa, gate. 4. Athens, Parthenon, suggested proportional system (from A. Lo Celso, *Euritmia arquitectónica*, 1950). 5. Athens, Parthenon, façade scheme (from O. Wolf, *Tempelmasse*, 1918-32). 6. Athens, Parthenon, rectangle of $\sqrt{5}$ applied to the plan (from Lo Celso). 7. Rome, Pantheon, façade, diagram after Blondel (from G. Jouven, *Rythme et architecture*, 1952). 8. Sarvistan, Iran, main hall of palace (from Lo Celso). 9. Rome, Arch of Constantine (from A. Thiersch, *Die Proportionen in der Architektur*, 1883).



Geometrical and mathematical interpretations of buildings. 1. Ravenna, S. Apollinare in Classe, façade (from A. Lo Celso, *Euritmia arquitectónica*, 1950). 2. Istanbul, St. Sophia, transverse section (from C. Bairati, *La simmetria dinamica*, 1952). 3. Pisa, Baptistery, section (from Lo Celso). 4. Milan, Cathedral, elevation diagram by the 14th-century mathematician Stornacolo (from G. Jouven, *Rythme et architecture*, 1951). 5. Paris, Notre-Dame, proportional scheme of the façade (from C. Funch-Hellet, *De la proportion*, 1952). 6. Florence, Pazzi Chapel, scheme of the façade. 7. Vicenza, Palladio's house, façade (from Bairati). 8. Rome, St. Peter's, section showing geometric relationships (from Lo Celso). 9. Rome, Palazzo Gaddi Niccolini, façade (from G. Giovannoni, *L'Architettura del Rinascimento*, 1935).

profession of architect was subservient to that of priest and only slightly above that of bureaucrat; hence the pyramids and temples reflect the organization of a state based on slavery. In Greece the merger of the functions of master mason and builder, indicated by the word "architect," was paralleled by a rigid typology, which almost precluded personal choice, and a highly finished plastic execution. In ancient Rome the architect was a public official or a contractor, but the decoration of the building was entrusted to artists with a Hellenizing tendency. This explains the dichotomy between structure and decoration in Roman monuments. In the medieval world the architect did not exist; there were only the builder-monks, the associations of masters, and the building guilds.

This mythical structure, which, by denying the architectural personality, served to reinforce the fascination of theories, has been slowly demolished during the 20th century. Evidence of definite personalities has been isolated in Egyptian structures, and it has been discovered that architects, particularly "the king's architect," enjoyed a prestige which was not determined by the priests but merely confirmed by them. In Greece, a position of honor was granted not only to the famous architects Iktinos and Kallikrates, Mnesikles, Bupalos of Chios, Mandrokles of Samos, Gitiadas of Sparta, and Hippodamos of Miletos — but also to the professionals, such as Philo, designer of the Arsenal of the Piraeus, who were intellectuals and members of the ruling class, possessing a wide culture and capable of defending their works in public. As for ancient Rome, Vitruvius's polemic against the masters who were usurping the functions of the architect — polemic much like that of the contemporary architect against the engineer — proves the awareness of a professional class. The fact that Alexander Severus founded schools of architecture and that Constantine promoted the discipline in Africa by demanding an adequate literary preparation of the students shows the importance attached to the architect. This is confirmed, as well, by the preservation of such names as Rabirius, Apollodoros of Damascus, and others, not to mention Vitruvius, and also by the architectural ambitions of the Emperor Hadrian. In Greece and Rome the failure to distinguish between architects of buildings and architects of bridges and fortifications suggests not only the indefiniteness of the profession but also the extent of its prerogatives. That architects were known in Byzantium is documented by a statement of Pappus of Alexandria, and that they were men of recognized cultural worth is, according to Meek, established by the texts of Procopius and Cassiodorus. Through Havell's studies of Oriental architecture, creative personalities have been identified beyond the limits of typology and symbology. Finally, the researches of Hasak, Dehio, Briggs, and Jackson have broken down the myth of medieval anonymity. The names of the architects of French, Italian, and English Romanesque and Gothic cathedrals have been discovered; and Street has clearly isolated individual architects working in Spain as early as the 12th century. Jackson's conclusion is incontestable: "Our ancient buildings did not grow of themselves without an author; somebody must have designed them, and that individual character which each possesses could not have been impressed by more than one individual mind."

The task for modern critics, then, is to transform the history of "styles," or of artistic language, into the history of architects. Any personalized structural image — whether a dolmen or a menhir, a psychiatric clinic or an atomic center — reveals the architect more clearly than any facts gleaned from documents or from a conventional biography. It is the artist who collects and interprets the content provided by his society and his clients. It is he who gives every building program the stamp of his vocation. He assimilates technical knowledge but is not dominated by it. Moreover, he uses and renews it in his spatial image. He participates in the stylistic currents of his time, but not passively; he intervenes with a contribution that enriches and transmutes them. The architect works in the midst of unending difficulties. He drafts projects that he does not execute, he constructs buildings that are later changed, he encounters the opposition of clients and building commissions; he is conditioned at every turn by the given environment — the

city regulations and the landscape. In brief, like every man who must live in the world and who seeks to represent it, he must win his liberty through supreme effort. The themes of architectural history are difficult and complex because the life of the architect is complex, because his human and artistic "choice" is difficult. Everything is resolved, and it cannot be otherwise, in the vicissitudes of the creative personality.

The problems of history, then, coincide, as is natural, with those analyzed in the first part of this essay. In attempting to define architecture, we must avoid formulating a series of evolutionary laws of space that could lead us to *Raumgestaltung* or to "Wölfflinianism" and its derivatives; in studying the problems of history, we must submerge every theory in history, characterize the styles of individual artists, and make architectural categories more precise by basing them firmly on the works themselves. In either case the architect emerges as the only true object of history. For this reason, the plates accompanying this article end with a previously unpublished series of illustrations of work characteristic of the great architects (PLS. 416-424).

ARCHITECTURE AND ITS HISTORY. The development of the modern definition of architecture as space, coincident with the solution of the major problems of history, made it possible, after two centuries of specialization and scission, to look forward to a new integration of the entire architectural field. The schism between architect and engineer (recognized in Paris in 1747 with the foundation of the *École des Ponts et Chaussées*), the separation between city planner and architect, the artificial distinction between architecture and interior decoration, and finally, and, most important, the division between sociology and architecture had torn the field apart, with equally tragic results for both the creative and the historical activities. The relations between architecture and history, in fact, were disrupted for decades. Architectural work did not help to renew or to bring up to date the methods of history, and the history of architecture did not serve the architects.

This crisis had a profound impact on the profession of architect and particularly on the teaching of architecture. Distinctions were made not only between architects and engineers within the profession but also between the architects themselves — between "official" architects, dedicated to the great representational themes, and functionalists, concerned with social problems, particularly those of low-cost housing. Interior decorators cluttered spaces for which they had had no responsibility, and those who constructed the building shell had no idea how it would be filled. On the one hand, city planners were concerned with population increase, production, education, traffic, the function of the dwelling, and the solar orientation of the minimal house; and on the other, architect-artists, far removed from these preoccupations, were much more interested in discussing the golden section in their compositions or the possibility of applying Dada to architecture. For every one of these splinter groups in architecture there was an academic discipline, a university course of instruction, and the number multiplied until at one time there were at least 30 different technical, cultural, or artistic divisions within the field. With the increase in specialization, the problem of educational unification grew steadily more pressing for both students and instructors. The schools, however, were, incapable of resolving it, for the division in the field was reflected in their own organization. The first half of the 20th century was marked by an academic crisis, a revolt against history, and, finally, the emergence of a new desire for integration.

The modern movement spells the ultimate collapse of academic instruction in architecture. It is well known that traditional education is based on the assumption that a valid grammar and syntax can be taught for any artistic composition. Originally orientated toward the "classic style," the universities gradually admitted the "Gothic style" and later, as archaeological discoveries uncovered periods of architectural inheritance formerly unknown or regarded as inferior, slowly accepted other "styles," until they finally fell into the most

cynical eclecticism. In the 19th century a student was required to plan the same structure — generally some official building such as a law court, a royal palace, a ministry, or at least a mansion — in the Roman, baroque, Chinese, and Tudor styles, and there was absolute certainty that a language, compositional rules, and certified formal dictionaries existed and made it possible to fulfill these demands. Normally instruction in stylistic dogmas was accompanied by an opportunity to experience the monuments from which these "styles" were supposedly drawn. An American architect, for example, would visit Paris, Rome, and Athens, where he presumably could verify the accuracy of what he had been taught. Although he did not find a single Greek temple or Renaissance palace proportioned according to the formulas he had learned in school, he contented himself with the conclusion that the academic models could after all be better than the original archetypes and that the neo-Hellenic and neo-Renaissance styles were undoubtedly an artistic advance over the historical monuments. In such cases an exceptional young man — for example, H. H. Richardson — would find in his European sojourn a refutation of the official styles, whether Victorian Gothic or French neoclassic, and would turn instead to another style, in this case the Romanesque, which seemed more in harmony with structural reality, more sincere in the use of materials, and more restrained in the use of decoration.

In one way or the other, the academic tradition, even though arid and tottering, served, despite all, to perpetuate a fund of common knowledge. It passed on to successive generations a grammar and syntax by means of which they could compose correctly even when all creative impulse was lacking; at the same time it enabled the true artists to get out of the official rut and to draw eclectically from the encyclopedias of documented forms to forge an idiom that would be personal but at the same time bound to the past. History always aided architectural practice and in some periods dominated it. The sequence of 19th-century revivals documents the triumphal progress of archaeological and critical attainments, but it is now recognized that even within this period of shifting styles the true artists found a mode of expression. The works of the past were, after all, an instrument within cultural history. Visiting and measuring monuments are not activities properly restricted, respectively, to the curious tourist or the professional archaeologist; they have value as well for the creative architect.

Richardson was in Paris from 1859 to 1865. Tony Garnier won the Grand Prix de Rome and went to the French Academy in 1901. In less than 50 years the situation had completely changed. Garnier's project for "une cité industrielle," which he developed in Rome, did not reflect in the least the study of Roman, medieval, or baroque monuments but the ideas of Saint-Simon and Fourier and the influence of a French technical and formal education. With Garnier the history-architecture nexus was broken. History no longer served to form the expert minds that turned to sociology, engineering, and city planning after being exhausted by stylistic formalism.

With the affirmation of the modern movement, the drama of Garnier's career became general. The didactic structure of the academy continued, but little by little modern architects succeeded traditionalists in the teaching of composition, and the history of architecture became an increasingly extrinsic, reactionary, and boring discipline. Architectural students at the academies of Paris, Rome, and Athens began to show less interest in the courses in archaeology and history. They considered measuring monuments a waste of time; and they viewed the works of antiquity with the certainty that they would learn nothing professionally valid from them. Confronted by this situation, some academies decided to omit the course in history and to free students from the task of making elevations of monuments. Though culturally suicidal, this seemed the only way to ensure that the best architects, those with modern leanings, would not avoid the academies.

The entire system was in crisis. The courses in history, even when they remained superficially intact, felt the gravest consequences. In the old academy instruction in composition and history was closely related, if not combined. The best

architects were the most acute and impassioned students of the monuments, and history was a vital instrument for the formation of the artist. With the advent of the modern movement, nothing remained of the subject but a cultural remnant, material informative along general lines. Architects were concerned with economics and sociology; they were engaged in the battle of "isms"; they were involved in the abstractionist movement; they were no more interested in history than dilettantes would be. In their eyes history served only for counsel, not for action. On the scientific-didactic level the crisis was no less explicit. Anyone interested in the history of architecture enrolled in the history of art, where he would at least learn the techniques of archival research and the methods of philological and critical investigation. The architect-teachers of history of architecture grew fewer in number and lower in prestige. Frequently representing the last bulwark of conservatism on architectural faculties, they resisted the modern movement and the new approach to teaching. Often they were not true architects, but frustrated architects; not true art historians, but "specialists," of little importance in the world of culture.

The Bauhaus, the training institute founded by Walter Gropius in 1919, was at the center of the educational revolution provoked by modern architecture. Instruction in history was omitted from the curriculum of the school on the grounds that history is a general cultural subject, not a professional requirement, and thus should not be a part of the program of the Bauhaus. Gropius never revised this position, not even after his appointment to the direction of the Graduate School of Design at Harvard. In his essay entitled *Blueprint of an Architect's Education* he devoted a brief paragraph, full of reservations, to the teaching of history: "Studies in the history of art and architecture, intellectual and analytical in character, make the student familiar with the conditions and reasons which have brought about the visual expression of the different periods: i.e., the changes in philosophy, in politics, and in the means of production caused by new inventions. Such studies can verify principles found by the student through his own previous exercises in surface, volume, space and color; they cannot by themselves, however, develop a code of principles to be valid for present creation in design. Principles have to be established for each period from new creative work. History studies are therefore best offered to older students who have already found self-expression. When the innocent beginner is introduced to the great achievements of the past, he may be too easily discouraged from trying to create for himself."

Walter Gropius is noted as one of the most cultivated and thoughtful of the modern masters; yet it would be difficult to imagine a more reactionary and biased concept of history. All the fallacies of the old history reappear here, and the possibility of revising educational methods is not even suggested. His argument may be summarized as follows: (1) The history of architecture is different from the history of art. (2) Historical studies are concerned with the "inventions" that have determined philosophical, political, and productive transformations, which, in turn, constitute the conditions and rules of visual expression. Gropius's view here is a brutally positivist concept that excludes the creative personality and the reconstruction of the artistic process. (3) History is an instrument for the verification of current taste, which results from "exercises" in surface, volume, space, and color. This idea is steeped in stylistic misconceptions and abstract-figural categories in which real monuments serve only to provide a cultural framework for a language forged on the basis of current "rules." (4) History cannot codify useful compositional principles. The principles that exist, however, are precisely those developed in the "isms" of such men as Theo van Doesburg and Moholy-Nagy, in the categorical "systems of vision"; they are not the principles of the artists. (5) History, with the weight of its splendors, suffocates the spontaneous expression of the student and precludes the development of his own originality. Hence the subject must be reserved for those who are about to receive the degree, for it is presumed that they have already found sure means of expression. In this view, history is still caught in the mental toils of the academy and the 19th-century battle

of styles, with the exception that modern style is now opposed to the variety of the past.

Unfortunately, when Gropius wrote this essay, in the 1930s, the teaching of history of architecture was generally not unlike his conception of it. In traditional programs the course stopped with neoclassicism; in progressive programs it continued with modern styles, from Arts and Crafts to Art Nouveau, from 19th-century engineering to the prerationalists and contemporary masters. The method, however, had not changed. The modern treatment of history still showed a strong academic inclination, which found its greatest exponent in Siegfried Giedion. His book, *Space, Time and Architecture*, is in many ways an important contribution, because of his close acquaintance with the principal protagonists of the modern movement, but it is methodologically based on the old historical distinctions — the technical contribution, the visual point of view, and at times the sociological. All those architects who did not obey, or who did not appear to obey, technicistic or abstract-figural principles — Olbrich, Hoffman, Gaudí, Mendelsohn, and Asplund, for example — were omitted from Giedion's history. In the first edition of this book even Mies van der Rohe and Alvar Aalto are missing. Once again theory dominated history. Structural and visual invention and, at the extreme, social and economic data have been considered the true motive forces in the modern period just as they were in the past.

It is not surprising that, in the face of this anachronistic cultural imposition, the modern movement, which began in opposition to the academies and their styles, fell itself into stylistic academicism — and perhaps an even worse academicism, because it was not supported by illusions and because it was more disorganized. The "objective truths" of function, technique, and vision that it postulated lost their significance before the obvious relativity of such values and before a process of historicization that involved the same epistemology. No one believes any more that the form of the architectural object can be derived mechanically from a system of industrial products, from the calculations of the engineer, or from optical laws. The avowed antiacademic position of the modern masters prevented them from attempting to formulate a grammar and a syntax for contemporary language, from permitting it to become a style. A style it nonetheless became, but a style without grammar or syntax, without compositional treatises, and without didactic order. The young architect was torn away from a history that might damage his spontaneous creativity and was called instead to develop his "self-expression" from the moment his education began. Naturally he did not develop it, but he imitated. Lacking reasoned and codified models, he imitated badly. This creative eruption could not even be expected to give way to a mannerist process, for modern eclecticism showed neither the rigor nor the intellectual elegance of mannerism. It rearranged and combined various elements from the lexicons of Wright, Mies, and Le Corbusier in a piercing cacophony that rendered discordant the interplay of city architecture; it lamented the slightly frigid but dignified atmosphere of the 19th-century quarters of a city; and, by postulating for everyone the possibility of being a poet, avoided the responsibility of providing norms for prose and literature.

The final attempt to create a style was made by Le Corbusier, a classicist and a profound admirer of Greece. Even though he was exposed to the *beaux-arts* tradition in France, he reacted against it. He produced "the modulator," a system of measurement based on the harmonies of the golden section, which was supposed to provide a means for proportioning every object of contemporary design, from a chair to a city plan. This attempt was negated, however, on the one hand by the intellectual remains of the antiacademic polemic and on the other by the exuberance of Le Corbusier's old age. The "five principles of modern architecture" proclaimed in 1922 — the pillar, the roof garden, the free plan, strip windows, and the free façade — were abandoned and almost derided by Le Corbusier himself in the chapel at Ronchamp. The regulating schemes were forgotten in the plan of Chandigarh. The modulator, though it still struggled to survive at Marseilles and Nantes, surrendered at the Unité d'Habitation in

Berlin. Architecture thus abandoned theory without joining history.

In reality the true modern artists have been anything but indifferent to history. When they claimed an entirely original architectural vision and denied the influence of any ancient or modern vocabularies, they behaved in a superficially anti-historical fashion, but a close examination of their work invariably weakened the myth of their cultural isolation. In some cases the impact of the past on current vocabularies has been quite explicit; in others it has been more subtle and hidden, yet still present.

If on the one hand historical knowledge leads to the passive position of the revivals, on the other it supports a renovating current in the formal language, though not always in a systematic way. This phenomenon was analytically documented in the author's essay *Architettura e storiografia* (1950). The studies of Morris and Ruskin formed the basis for the Arts and Crafts movement of 1860, which Morris himself promoted. In both Europe and America the architectural revolution against the ruling neoclassicism turned to a medievalizing culture. Richardson's experiences, which we have already mentioned, are comparable to those of Cuypers and Berlage in Holland and of Boito and Moretti in Italy. The historical vision of Viollet-le-Duc can be found at the origins of structuralism, that is, 19th-century engineering. The masters of Art Nouveau, from Victor Horta to Henri van de Velde, drew on the Gothic for their lexicon of linear forms. In 1899, Camillo Sitte published *Der Städtebau nach seinen künstlerischen Grundsätzen*, which marks the discovery of the art of medieval city planning; nine years later Ebenezer Howard put an end to 19th-century urban utopias in *Tomorrow: A Peaceful Path to Real Reform*, which signals the birth of modern city planning. The concept of the garden city, which focused attention on the important problem of current city planning, that is, the dimensions of the city, found its most valid formal and social precedent in the Middle Ages. Otto Wagner and Tony Garnier, however, were more strongly influenced by the culture of the Renaissance and thus cannot be counted among the medievalists. Le Corbusier as well should be excepted, for in his purist leanings he is more closely related to the thought of Claude Nicolas Ledoux. Le Corbusier's search for a rule of proportions and his debates on the nature of the fourth cubist dimension in architecture — which involves the neoplastic fragmentation of volumes and provides the substratum for the art of Mies van der Rohe — recall the Renaissance arguments on perspective. Wölfflin's reevaluation of the baroque corresponds to a moment of plastic and spatial reintegration that was prophesied by Antoni Gaudí and that exploded in the expressionist *Sturm und Drang*, particularly in Eric Mendelsohn. It is expressed as well in the antirationalist organic movement of the American school of Wright, in the architecture of Alvar Aalto, and in Swedish neoempiricism. The Greek influence is evident in the work of Gunnar Asplund and in Le Corbusier's preference for molding. The Oriental background, particularly the Japanese, helped form the culture of Wright, Bruno Taut, and American organic architecture in general.

Because of this convergence of historical thought and creative architecture, some have proposed extending the assumptions of D'Ors to set up a modern section in the presumably permanent categories of Gothic and baroque. This is a foolish suggestion. It is equivalent to the attempt to isolate a "rational constant" throughout the history of architecture by bringing together various monuments from the past that are characterized by a particularly elementary stereometry, by the absence of applied decoration, or by structuralist rigor. Such efforts undoubtedly prove the need for some sort of a nexus between architecture and history; but they are at fault in attempting to express this necessity within the frame of stylistic concepts, in trying either to force modern work into the categories of antique styles or to follow the reverse procedure, to evaluate ancient monuments in the light of modern taste.

In such cultural difficulties the schools were replaced by the traditional "architect's shop." Students went to Paris not to enroll in the Ecole des Beaux-Arts but to work in the office

in the Rue de Sèvres, where Le Corbusier freely taught architectural composition. In the United States, Wright founded the Community of Taliesin, and young and impassioned architects flocked to it from all over the world. Once the relation between culture and the university had been broken in Italy, the best architects, from Terragni to Pagano, lost interest in the schools and emphasized a culture at first merely separated from the official teaching and then openly opposed to it. This return to the old direct, "practical" teaching, though valid in many respects, satisfied the requirements of relatively few, for, unlike the élite who found the doors of the great offices opened to them, most students were still caught in the web of traditional education.

Traditional teaching was a dead-end street that only slowly began to open in the 1950s. Three different phenomena contributed to the modernization: the maturing of a modern architectural vocabulary; a new criticism, aided by a renewed awareness of the function of the past in contemporary civilization; and the educational upheaval. By mid-century, it has been asserted, the modern movement had abandoned the polemical position of an avant-garde and had acquired a sense of its place in history. Rationalism despised the Art Nouveau of the late 19th century, but it was later recognized that some who participated in that movement were among the most significant artists of their time. The Arts and Crafts group was gradually reevaluated, and artists like the Scotsman Mackintosh and the Catalan Gaudí were discovered. The Viennese Secessionists were also reconsidered, and the creativity of engineers from Eiffel to Freyssinet and Maillart, once stripped of the artificial cloak of "pure" technique, was fully acknowledged. The "isms" of the battles of 1920-30 were freed from the rigidity of academic formulas, and whether within their programs or outside, the figures of the true creators emerged. Thus it was discovered that the greatest exponent of neoplasticism was Mies van der Rohe and that the de Stijl movement had no part in it. The shibboleths of "technique," "functionalism," and "modes of seeing" lost their potency, and architects gave greater attention to the quality of the works than to the manifestoes of tendencies. The organic movement, which became active in Europe about 1930 and was critically elaborated about 1940, offered a clear invitation to treat modern architecture historically. Opposing the positivist position and the metaphysics of rationalism, it separated personalities from stylistic currents; thus architecture requested the help of history.

The renewal of criticism has been mentioned in the first part of this essay. As Ragghianti has noted, there is a clear relationship between the historical doctrines of Wölfflin and Hildebrand and the manifestoes of such artistic movements as futurism, Dadaism, and abstractionism in general. The new criticism, by centering its attention on the personality and not on abstract categories of vision, removed one of the cultural props of the "isms" and gained the advantages of a fresh outlook on the past and a broad need for the history that modern civilization had denounced.

In the Renaissance the ostentatious enthusiasm for the monuments of antiquity did not imply the wish to preserve them. They were not considered historically but were loved because they reflected the artistic taste of the moment. They were a part of the present and, as such, could be altered, modified, or disfigured to meet any requirement; the marble of the Colosseum, for example, was taken for the construction of St. Peter's, and other monuments were changed in an attempt to give them a "better" classic structure. Antiquity referred, not to the past, but to classicism, to a suprapersonal paradigm, a Platonic ideal that incarnated the monuments of the moment as well as those of Greco-Roman antiquity. Lacking a sense of history, Renaissance critics considered it perfectly legitimate to destroy the surroundings of a monument or to raze medieval remains that were not in harmony with classic taste. During the 19th century the intellectual position in respect to the past changed considerably, for new archaeological discoveries had opened wide cultural horizons. The enthusiasm for Greece and Rome was supplemented by a taste for Gothic, Byzantine, Egyptian, and Oriental art. The monuments of the past, how-

ever, were still considered contemporary architecture, capable of repetition, not as definite and concluded historical facts. This position gave rise to the revivals and an approach to the monuments that was no more respectful than that of the Renaissance. The artists of the Quattrocento did not hesitate, in their drawings, to "improve" the monuments of antiquity according to their own inspiration; the 19th-century artists perpetrated the most arbitrary restorations convinced that they were thus completing or even correcting the works of the past. There was still little awareness of the environment of a monument. In the reorganization of cities the major monuments were preserved, but they were completely taken out of context. The principle of "isolating" a work of art prevailed and led to disastrous consequences. To level an entire city with the exception of some fifty monuments is the basic desire of a demagogic society wholly insensitive to the value of environment.

Thus we arrive at the contemporary period, which has seen the acceptance of modern architecture. Here the sense of history has become more precise; and it intends to respect the integrity of the past. There is no longer a question of evaluating one period over another in accord with contemporary taste, for the imitation of the past is forbidden; the modern world has developed a vocabulary that excludes "copying." Modern man has a profound need for the past precisely because he no longer uses it as a tool. Since he is concerned with individual and unrepeatable images rather than with "styles," he cannot live without history. As a result a dramatic tension has developed between the forces of economic expansion, particularly city planning and construction, and culture.

When a medieval district was destroyed to be replaced by neo-Roman or neo-Gothic buildings, the massacre did not seem particularly scandalous to the general public. Now that the suburbs of the cities have become saturated, any profanation of the historical centers becomes obvious to all. If new buildings are erected with a façade designed to give the appearance of age, idiocy joins vandalism. Even in constructing a clearly modern work, the artist lacks complete moral certainty, for a new building implies a demographic expansion disastrous for the old centers, which are already suffering from the pressure of suburban growth. Modern city planning envisions the coexistence of the old and new in an articulated civil organism, but historical-critical culture has not yet influenced the authorities or public opinion to the extent that this goal can be realized.

The economic-cultural struggle of the modern period can also be observed in the criteria for the conservation of single monuments. Although Ruskin's thesis of nonintervention, which would allow the monument to die honorably without prolonging its life artificially, has not been accepted, "scientific" restoration has theoretically replaced the romantic method of "recomposition" advocated by Viollet-le-Duc. In theory, "scientific" restoration would not permit the counterfeiting of old parts with modern substitutes; anything new would have to be clearly indicated as such. In practice, however, the problems posed by an immature critical consciousness have usually proved prohibitive. (1) Buildings that were constructed or modified in different periods: If, for example, the same building has a Romanesque skeleton, Renaissance modifications, and baroque decoration, which "edition" should be restored? Although it is clearly ridiculous to identify the oldest with the most beautiful, significant baroque churches have been destroyed in order arbitrarily to rebuild presumed 11th-century organisms. (2) The discords created by the mechanical distinction between old and new parts: Among the most obvious examples are the innumerable columns that have been pieced out with courses of brick. Any monument that has undergone this kind of restoration becomes a lifeless object — useful for the student to consult, but completely devoid of the evocative power it contained prior to the restoration. (3) The use of modern rather than historical constructional techniques: Pilasters of reinforced concrete have been inserted into old walls, and ceiling beams have been replaced by steel, which has then been masked. (The reconstruction of the Bridge of Sta Trinita in Florence according to the original techniques used by Ammannati is, as indicated above, one of the rare exceptions to the rule.)

These negative aspects of scientific restoration are the result of the schism between art and historical culture. Who can decide whether a baroque church is more valuable than the earlier Romanesque structure? Who can determine what color, tone, and texture modern materials should have in order to be inserted between old pieces without interrupting their expressive discourse? Who can judge whether to replace worm-eaten beams with steel or reinforced concrete that is left visible, thus obtaining interesting but sometimes surrealistic effects? Clearly it is only a purely modern architect who can meet these demands, a cultivated artist who understands that restoration is a creative task, who respects what remains from the past, but who senses the possibility of composing a new image, necessarily different from that of the past but in harmony with it. Even the restoration of monuments requires new critics and new artists and the integration of their contributions.

In the field of education the appointment of Walter Gropius as chairman of the Graduate School of Design at Harvard in 1937 was like a bomb placed in the foundations of academic training. After a few years Chicago called Moholy-Nagy and Mies van der Rohe; Massachusetts Institute of Technology invited Alvar Aalto; and Yale, Berkeley, and Oregon reorganized their faculties. The same process was repeated in Europe. The best-qualified modern architects returned, because of a personal need for culture, to the universities they had left in disgust after their degrees. In so doing, they radically altered the direction of the universities.

Who suggested Walter Gropius to Harvard? A historian of architecture, Joseph Hudnut, a quiet man of broad learning who was the first to attempt to find a mode of coexistence for modern architecture and the modern history of architecture. The times, however, were not yet propitious for the harmony or collaboration needed for coexistence. It was necessary to wait for modern architecture to be drawn back to historical culture by the intrinsic demands of its own development, once it had broken free of the preconceptions of "styles." It was also necessary to wait for history to free itself from categorical misconceptions, to give critical support to the creative experience of contemporary artists, and to dedicate itself to the study of the preceding hundred years of history, one of the least known periods even on the level of documentary research. By the middle of the 20th century these objectives had begun to be achieved, thus bringing about the conditions necessary for a cultural integration. Then the problem of making educational historical appeared, and around it raged one of the most vigorous cultural battles of the 1950s.

In the forties and fifties the spirit of the traditional "architectural office" still dominated a large sector of education. A young American enrolled at the Illinois Institute of Technology if he liked Mies van der Rohe, at Berkeley if he preferred William Wurster, or at Yale if he favoured Louis Kahn. In this sense, the return of the modern architect to the school indicated the transposition of the office to the school rather than any fundamental educational reform. The stronger the personality of the teacher, the less free was the student. He had a means of learning the coherent vocabulary of a true architect, but the architect was still a despot, though chosen freely. Once his formal education was completed, the young architect could forge his own vocabulary, if he was an artist, and the experience of working with a great architect would prove useful, to him. If, however, he lacked the strength to become an artist, he would be only a correct composer of prose who followed in the wake of the "school" whose grammar and syntax he had assimilated. His architecture would be mannered but not eclectic. He would be a declared and honest disciple of Mies or Wurster, but he would not have a blending of elements drawn freely from the lexicons of both. Courses in the history of architecture, which naturally included modern architecture, illustrated the numerous possibilities of the modern vocabulary by characterizing the major personalities. In these schools, even though they were dominated by exceptional personalities, the student had an opportunity to confirm his choice of a master or to find an alternative, so that the didactic problem was resolved, although perhaps empirically.

The problem was still pressing, however, in schools that did not have a true architect, an authentic creator of a vocabulary. In these schools, which represented the majority, the structure of academic instruction remained, but without content or persuasion. Universities should teach a means of composing, a grammar and a syntax, but they no longer believed in the traditional vocabulary, and they did not know what to substitute in place of it. Thus they easily fell into agnosticism or "modern" eclecticism. The students leafed through architectural magazines and copied the exterior aspects of the work of Wright, Mies, Le Corbusier, and Aalto. Occasionally, they attempted to find a "synthesis" of the various stylistic ingredients — the old illusion of the academies. Frequently they felt ill at ease and sensed a profound moral void. Courses in the history of architecture, and often books and magazines in the field, gave these young men the clear impression that they were beginning their profession in a period that was no longer transitional but formally mature. They either did not know how to choose a master or, more often, were unable to make the choice.

In such an impasse the problem of teaching architecture historically was discussed with increasing intensity. If modern history could distinguish between the most similar figures of the 15th or 17th centuries, if it was capable of characterizing unequivocally different contemporary architects, it should be able to equip the student to find his own master. The traditional academy placed the student in a position to select the "Greek style" or the "Gothic style"; the modern university offered him a choice between the "rationalist style" and the "organic style," the purist and the neoplastic compositional mode. Presumably the new school could examine the history of Aalto, Niemeyer, Jacobsen, or Hamilton Harris with a critical precision that would permit the students to relive the creative process of the master as if they had been working in his office. The student could carry this personalized language further, for he could imitate it directly as he could not through imitators. Exercised with the same rigor used by the academies of the past, the teacher's criticism could give coherence to the total language of the master the student had chosen.

At the time of writing, this method of education is still at the level of a working hypothesis, since it has not completely permeated the discipline of architectural education. But courses in the history of architecture that were once almost completely deserted have become among the most popular in the curriculum. Students now debate the value of the Cathedral of Salisbury and the Church of St. Irene in Istanbul, of Pietro da Cortona and James Gibbs, with the same passion they once used in the defense of Gothic art against neoclassicism or of Le Corbusier against Wright. History has become completely "modern" and current. A lecture on S. Ambrogio in Milan attracts as many architects as one on the United Nations Building. History is once again a vital instrument in the formation of the architect. No longer an extraneous discipline that barely conceals the pretext of making a historian of every architect, it is now essential from the point of view of professional preparation. In this sense, there are two types of instruction in architectural history — one directed toward creating art historians, the other toward creating architects. This second type of instruction is no longer the pale reflection of the first. Although methodologically the same, it is "psychologically" different, because it is directed toward different ends.

In the most advanced schools the subjects of composition and history are treated in collaboration, so that the value of the new courses in history can be verified only on "projection tables." Other disciplines, however, particularly those concerned with technique, are still tied to the traditional and dogmatic education. It is not easy for even the most up-to-date instructors to teach calculus or the science of construction effectively from the historical point of view. It would be highly optimistic to conclude that the total historicization of the culture or even of the teaching of architecture has been attained, but clearly the way for the cultural integration of architecture and its history has finally been opened. There is one difficulty: if in this atomic age — which is based on automation and an obsession with publicity; which accentuates the disassociation

between abstract thought and image, between intellectual and esthetic experience, between mechanical and creative production; which lacks interior energy, vitality, and solitude — if in this age the architects should, as Giovanni Bottari said two centuries ago, "fail to use their reason," they will become "plebeians, presumptuous persons who are without design." In such a case Martial would be correct: "If your son is seen to be slow of wit, make him a town crier or an architect."

Bruno Zevi

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The bibliography, intended to suggest certain important works in each period, includes both historical and critical writings related to the problems discussed in the text. For each period it is arranged alphabetically according to authors' names. For studies of particular periods, monuments, or architects, see the bibliographies accompanying the various historical and biographical articles; for particular types of buildings, see the bibliography accompanying the article STRUCTURAL TYPES AND METHODS. Column numbers following the references indicate citations in the text of this article.

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b. Medieval period: The following is a list of thinkers and writers of the medieval period who have made important contributions to the development of esthetic ideas concerning architecture, with an indication of the works most directly related to this article and occasionally of the most significant parts. Fourth and fifth cent.: St. Paulinus of Nola, *Carmina*; St. Augustine, *De Civitate Dei*, VI, 2, *De Vera Religione*, *De Ordine*, II, chap. XV, 42. Fifth and sixth cent.: Cassiodorus, *Variae*, II, 39, VII, 5, *Varium libri*, IV, 51, in Migne, *Patrologia Latina*, 69-70. Sixth cent.: Boethius, *De Geometria*, in Migne, *Patrologia Latina*, 63-64; Procopius, *De Aedificiis*, I, 1; Paul the Silentiary, *Descriptio Ecclesiae Sanctae Sophiae*, in Migne, *Patrologia Graeca*, 86 bis. Sixth and seventh cent.: Isidore of Seville, *Etymologiarum libri XX* (esp. Book XIX), Diff. I, 8, in Migne, *Patrologia Latina*, 82. Eighth cent.: Theodulf of Orléans, *Libri Carolini*, C. 117, in Migne, *Patrologia Latina*, 98, col. 949 ff. Ninth cent.: Rabanus Maurus, *De Universo*, XXI, C. 2-3, in Migne, *Patrologia Latina*, 107-12. Twelfth cent.: Honorius of Autun, see Nicco Fasola, *h*; Gerhoch von Reichersberg, *Liber de Aedificio Dei*, chap. I, in Migne, *Patrologia Latina*, 194. Thirteenth cent.: Villard de Honnecourt, *Livre de Portraiture*, Vienna, 1935; Vincent of Beauvais, *Speculum Doctrinale*, II, see J. von Schlosser, *Quellenbuch zur Kunstgeschichte des abendlandischen Mittelalters*, Vienna, 1935. See also the following general works: A. Pellizzari, *I trattati intorno alle arti figurative*, Naples, 1915; J. von Schlosser, *Die Kunstillustratur*, Vienna, 1922 (Ital. trans., *La Letteratura artistica*, 2d ed., Florence, Vienna, 1956); E. Panofsky, *Idea*, Leipzig, 1924; L. Venturi, *Il gusto dei primitivi*, Bologna, 1926; E. G. Holt, *Literary Sources of Art History: An Anthology of Texts from Theophrastus to Goethe*, Princeton, 1947, 2d ed., New York, 1958; G. Nicco Fasola, *Regionamenti sull'architettura*, Città di Castello, 1949; and the following specialized works: V. Marchese, *g*; M. Donati, *h*; W. A. Eden, *h*; E. de Keyser, *h*; E. Krakowski, *h*; Svoboda, *h*.

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Tullio de Mauro collaborated in the preparation of the part of the article dealing with linguistic definitions.

Illustrations: PLS. 376-424; 4 figs. in text.

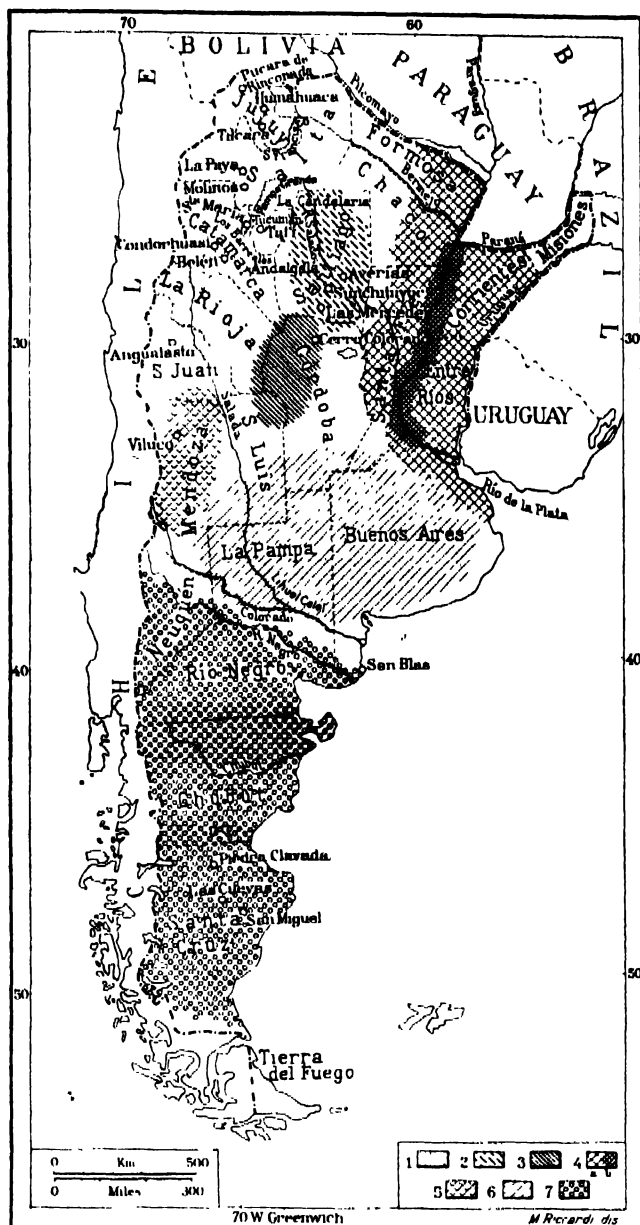
ARGENTINA. The vast territories at the southern extremity of the South American continent, east of the Andean cordillera, which are comprised within the borders of Argentina afford evidence of a comparatively sparse artistic activity, in view of the size of the country. As in all American territories, there are two distinct historical phases in Argentina: that prior to European colonization and the modern phase.

SUMMARY. Pre-Columbian period (col. 710): *Northwestern region; Chaco-Santiaqueño region; Central Sierra region; Coastal region; Cuyo region; Pampas region; Patagonia region.* Modern period (col. 714): *Colonial phase; Nineteenth and twentieth centuries.*

PRE-COLUMBIAN PERIOD. From the archaeological and artistic standpoints Argentina offers less of interest than other American countries, especially if compared with Central America and Peru

(see AMERICAN CULTURES; for background material on South American arts, see SOUTH AMERICAN CULTURES). For a detailed study of Argentina, the territory may be classified by areas corresponding in general to distinct ethnic groups (see map, FIG. 711). Some cultures and arts obviously persisted locally for some time after the Spanish Conquest.

Northwestern region. This is the most important region, comprising large ethnic groupings such as the Diaguita, Humahuaca,



Argentina: Culture areas and centers of native arts. Key: (1) Northwest zone; (2) Chaco-Santiago region; (3) Central Sierra region; (4a) coastal zone; (4b) coastal pottery centers; (5) Cuyo region; (6) Pampas region; (7) Patagonian region.

and Atacameño. The territory is mountainous, with deep valleys traversing it longitudinally. At its northeastern end lies the imposing Puna plateau, consisting mostly of desert land interspersed with vast salt pans and with mountains rising more than 3,000 ft. above it (10,000 ft. above sea level).

Not all the manifestations of artistic interest in this area belong to the same period. Some date from the pre-Inca age of Peruvian civilization, but there are insufficient stratigraphical data available for a detailed chronological classification.

The northernmost part of the region saw the birth of the Atacameño and Humahuaca civilizations, the former originating in the Puna plateau and the latter in the Puna and surrounding valleys.

The most evolved and representative art is to be found in the wood carvings of idols, sometimes standing alone and sometimes mounted on tablets. Typical also is pyrogravure on gourds, found principally in the Puna region.

The prehistoric city of La Paya marks the boundary between this section and the Diaguita territory, where there is a wide variety of art forms. The ceramics recovered in La Paya represent two local styles: the La Paya style proper and the Inca Paya or Casa Morada style developed under the influence of the Cusco artisans who came there in the train of their masters, the Inca conquerors.

In the southern part of the region, the Diaguita section, pottery is of special significance, both technically and artistically, in identifying individual cultures. The most important of these cultures are: (1) The Santa María or Calchaquí, named after the valleys in which it developed (the Santa María valley being a continuation of the Calchaquí), and characterized by the pottery of the so-called "classical" Santa María or Calchaquí style. Typical examples are children's funerary urns in the shape of a human figure clasping a vessel, the whole being edged around with geometric, animal, and sometimes human motifs. The animals represented are rheas in profile, snakes, and frogs. The execution is very sketchy, often with incomplete figures, but without the grotesque deformations found, within the same civilization, in the variant style known as Valle Arriba. (2) The Los Barreales culture, in which the painted or incised decoration of the vases features a stylized and distorted feline, sometimes with a serpent's body and a human head, in dragonlike form—whence the name "Draconian pottery" given to it by Lafone Quevedo. (3) The Belén culture, which is fairly widespread and derives its name from a village in the province of Catamarca. Its most distinctive stylistic feature is a strange animal with a disproportionately long tail, triangular head, and gaping jaws, which appears to belong to the lizard family but occasionally has the appearance of a mammal. It is in this Andean decorative style that the serpent is depicted with the greatest freedom and variety. (4) The Condorhuasi culture, geographically limited but undoubtedly more ancient. (5) The Angualasto culture, which had its origin in the southern sector of the Diaguita region and is noted for its geometric style. On the fringes of that area, particularly in the provinces of Tucumán and Salta, pottery of considerable artistic value has been produced. Art styles deserving of particular mention are that of La Candelaria, which has been studied by Rydén and Métraux, and those of Río San Francisco and Pampa Grande, studied respectively by Nordenskiöld and Ambrosetti.

The clay figurines are among the outstanding art forms, combining a variety of subject matter with uncommon artistic skill. Lobet de Tabbush has attempted to classify them and determine their distribution, if only from the formal rather than the artistic standpoint. The metal craftsmen of the ancient Diaguita produced, among other objects of unquestionable artistic merit, the disks of Andalgalá and Molinos, representing a deity guarded by two felines. Small human statuettes, finely sculptured in hard stone, are often found in the sites of the provinces of La Rioja and Catamarca. There are also to be found containers in the form of diceboxes, carved with human and animal figures, and a number of curious masks and ceremonial axes, likewise carved in stone.

In the Tafi Valley, in the province of Tucumán, there is an abundance of menhirs, some of which are decorated with geometric figures. The most famous group is that known as El Mollar. There is a strong probability that these correspond in structure to the sacred monuments of the "kalassaya" or ceremonial enclosure type, which are frequently seen along the Peruvian coast and in some islands of the Pacific.

Petroglyphs are widely represented throughout the region, although they are not uniform in technique or style, which is hardly surprising in view of the vastness of the territory. They are clearly the work of different peoples and periods. Special mention should be made of the pictographs in the Carahuasi grottoes in the province of Salta and in the archaeological area of Pampa Grande, where there are numerous caves with complex and lively scenes of warriors and hunters. Another noteworthy example of this art is afforded by the pictographs of Pucara de Rinconada in Jujuy Province, which were studied at the beginning of the century by Boman. The scenes are full of movement and represent human figures variously attired, some apparently soldiers and others prisoners, possibly returning from a punitive expedition.

Chaco-Santiago region. The central province of Santiago del Estero is divided obliquely by two large rivers, the Río Salado and the Río Dulce, which have shifting river beds due to the formation of the low, flat terrain through which they flow. The ancient arts of this region were grouped together by the brothers Emilio and Duncan Wagner, who discovered them, under the single category of "civilización Chaco-Santiago" in the belief that they constituted

a uniform and very ancient civilization, indigenous to what they described as "the Empire of the Plains." That theory, however, was never accepted by Argentine archaeologists.

Nowadays the Chaco-Santiago group is thought to comprise no less than three distinct cultural manifestations, named after the three typical sites of Averías, Sunchituyoc, and Las Mercedes.

Two decorative styles predominate in this area. One, decidedly eastern and native to the plain in which it developed, is characterized by the portrayal of a large owl-like bird, represented full-face and decorated with a black design. It is mainly curvilinear in outline and embodies elements somewhat dissociated from those of the bird itself. Plastic art is represented by human figures, modeled as statuettes and appended to funerary urns. The other style, known as "Santiagueño polychrome," is based on representations of a bird in profile with a round or crozier-shaped head.

Central Sierra region. This region corresponds to the mountain lands in the central part of the country, the Sierras de Córdoba. Of greatest artistic significance are the small clay figurines, different in type and mold from those of the northwestern region, and the famous petroglyphs of Cerro Colorado, depicting hunting scenes and battles between natives and Spaniards.

Coastal region. This region comprises the country watered by two large rivers, the Paraná and the Uruguay. Along the Paraná the land is low-lying and subject to floods except in a good part of the provinces of Entre Ríos and Corrientes, where it was left high-standing as a result of landslides in former times. These lowlands were settled by a race of skilled potters — boatmen and hunters — who modeled fine clay heads and animals, mainly birds, which they fitted onto their vessels. This art portrays the local fauna and originated with the Chaná Timbú, who lived in the early days of the Spanish Conquest. There are no traces of this type of plastic art along the course of the Uruguay, but in its lower basin and in the Paraná delta one finds vessels decorated with incised geometric designs. The Guaraní of the Paraná delta used a different decorative technique for their ceramics, producing elegant patterns of red and black lines on white clay vessels.

Cuyo region. This consists of the southern part of San Juan province and most of the province of Mendoza, which bears the historical name of Cuyo. Artistic manifestations are few and little developed. Along the valley of the Viluco there is a distinctive ceramic style based on geometric designs. In the northern sites there are petroglyphs similar to those found in the southern provinces of the northwestern region, while to the south geometric motifs and representations of tiger and rhea footprints predominate.

Pampas region. The plain south of the 34th parallel constitutes the Pampas, a territory inhabited in early times by peoples of limited cultural and artistic development. There is no art of archaeological interest apart from the few petroglyphs to be seen in certain mountain ranges (Lihuel Calel, for example) bordering on the Río Salado or Chadielufú.

Patagonia region. The main artistic interest of this region lies in incised plaques and negative-painted pictographs of hands. Petroglyphs and stone carvings are common in Patagonia, especially in the Andean and Central Atlantic section of the Santa Cruz territory. In his study of Patagonian rock painting, Menghin discerns three distinct types of representation, the first consisting of prints of hands and feet, the second of human and animal figures, and the third of symbolic and geometric signs and animal footprints in miniature. According to Menghin, it is not yet possible to attempt a stylistic analysis of these manifestations, but it is safe to say that the different groups are not merely various chronological or regional aspects of a single artistic unit. The first group is to be found at Las Cuevas, in the province of Santa Cruz, and together with the incised plaques represents the most typical form of primitive Patagonian art. The incised plaques are encountered along the Atlantic coast between San Blas and Río Santa Cruz and also along the Negro and Limay rivers at the northern border of Patagonia. The designs, which seem to derive from the technique of basketry, have been studied in detail from the artistic point of view by Greslebin.

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Antonio SERRANO

MODERN PERIOD. Colonial phase. The monuments of the colonial phase are concentrated in a few of the major towns, outside of which production is scarce and of little interest.

Buenos Aires. The city was founded twice (1536 and 1580) and has grown steadily in importance ever since it was reorganized by Rivadavia in 1821. Artistically it has been influenced by Spanish-American and Portuguese styles as well as by Lima rococo. Among the few colonial buildings which have been preserved are the Cathedral and the Cabildo. The Cathedral was built in 1593 and subsequently underwent a number of alterations, the present building having been consecrated in 1791. The Cabildo was founded in 1608 and renovated between 1725 and 1765. Of the original structure there remain only the central part, restored by Buschiazzo, and six of the eleven frontal arches; the tower has been lowered. The principal churches are Nuestra Señora del Pilar (completed in 1732), S. Catalina, S. Francisco, S. Domingo, S. Ignacio (inaugurated in 1723), and the Chapel of S. Rocco, which is annexed to S. Francisco. The few remaining paintings are of no great value. In 1808 the Cabildo proclaimed Angelo Maria Camponeschi, a Roman artist who painted the portrait of Brother José de Zemborian, "the best artist of his times." A drawing academy was instituted in 1799 on the initiative of Manuel Belgrano, but lasted for only one year. Achievements in sculpture and wood carving have been more significant, and some works of fairly high quality have been preserved. Of these, one of the outstanding is the *Santo Cristo de Buenos Aires* in the Cathedral, executed by Manuel Coyto, the Portuguese artist, in 1671. Noteworthy contributions in this field were also made by Isidro Lorea, Juan Antonio and José A. de la Fuente, and José the Indian. One of the foremost furniture makers was José Schmidt, S.J. The activity of local silversmiths and goldsmiths developed extensively from the time of Juan Velázquez de Utrera (1536) onward, as can be seen from a list published by Márquez Miranda in 1933; 14 masters and 13 journeymen were registered in 1748, and by 1788 the number of masters had increased to 47.

Córdoba. In colonial times this area was a centre of religious activity, and large Jesuit missions were established in the Sierras. These include S. Catalina (with its church, monastery, novitiate, and religious meeting ground), S. Isidoro, Alta Gracia, the richly decorated 18th-century chapels at Candonga, S. Antonio, Dolóres, S. José, and S. Marco. The principal monuments of the city of Córdoba are the Cathedral (founded in 1574, inaugurated in 1582, and rebuilt 1729-39) and the Jesuit church, which is lavishly decorated with cedar, urunday, and lapacho woods and with baroque paintings on the paneled ceiling. The most interesting private houses are the Casa de Sobremonte — now the Historical Museum — and the Casas Cobos, Allende, and Tristán, which reflect the Spanish-Moorish baroque style.

Salta. This city is native in tradition and colonial in aspect. Its main public buildings are the Monastery of S. Bernardo, the Cabildo with its tiered loggias and state balcony, and the Church of S. Francisco (1759). Other noteworthy features are the façades of the Jesuit College and the Merced and three large houses — the Casas Arias, Rengel, and Mediolanza — interesting for their patios, vestibules, windows, and balconies. The influence of the Guaraní-missionary and the Indo-Peruvian-colonial styles is marked.

Jujuy. Small city of colonial aspect, notable for its baroque "pulpit." In the Humahuaca gorge are small colonial churches at Humahuaca, Maimera, and elsewhere.

Jesuit Missions. All the buildings prior to 1764, that is, before the introduction of lime, are of clay. The principal churches are the Missions of S. Ignacio, La Trinidad, S. María, Itapúa, La Candelaria, S. Miguel, S. Carlos and S. Nicolás, S. Juan, and El Jesús. The paintings of the Verger and Grimaud brothers, and of the Indian artist Kabiýú, as well as the carvings by the Indians Yaparí, Tilcara, and Paica are characterized by religious fervor and stylistic ingenuity.

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Nineteenth and twentieth centuries. The 19th century produced very little good architecture even though it was the period in which the towns began to be transformed into modern cities. The colonial style was succeeded by various hybrid styles of European origin until the close of the century, when French Second Empire tastes prevailed — at least in the fashionable part of Buenos Aires. The first painters were travelers, like the Englishman Emeric Essex Vidal (1791-1861), and such transplanted or transient European artists as Raymond Auguste Quinsac Monvoisin (1790-1870), Carlos Enrique Pellegrini (1800-75), Jean Léon Pallière (1823-87), and Juan Mauricio Rugendas (1802-58). The first Argentine painter of note was Carlos Morel (1813-94). The outstanding painter was Prilidiano Paz Pueyrredón (1823-73) — an excellent portraitist who also produced some interesting landscapes. At the turn of the century, when artists started traveling to Europe for study, a group of Argentine artists was formed that included the painter Eduardo Sívori (1848-1918) and the sculptor Lucio Correa Morales (1852-1923). Among the younger artists to achieve distinction were Martín A. Malharro (1865-1911) and Ernesto de la Cárcova (1866-1927).

By the beginning of the 20th century Argentines who had studied in Europe were working side by side with immigrant Europeans, and the architects among them shaped the face of Buenos Aires during the first twenty years of the century. Victor Maeno built the Palacio del Congreso and planned the Teatro Colón, which was completed by the Belgian architect Julio Dormal. The latter designed the old esplanade at Mar del Plata, a masterpiece of its kind, and the Argentine hippodrome; he was also responsible for the layout of Palermo Park, the idea for which originated with Sarmiento. Toward 1930 Alejandro Virasoro began to wield an influence which, although foreign to Argentine esthetics, played an important part in the growth of modern architecture. Shortly after him came the Vilar brothers, who built the numerous service stations of the Argentine Automobile Club and helped to modernize the country. Alberto Prebich was also active at that time. The younger architects of note are Antonio Bonet, who originally came from Spain and has worked in Uruguay, and Ferrari Hardoy and Kurchan, designers of the first large apartment house in modern style. Eduardo Catalano, now residing in the United States, is undoubtedly one of the most brilliant of the younger architects. Although Buenos Aires has had a town-planning council for many years, the only plan of interest produced to date is the one drawn up twenty years ago by Ferrari Hardoy and Kurchan in Le Corbusier's studio and carried out later in a somewhat haphazard fashion. To Carlos Noël goes the credit for opening the "Diagonal" avenues in Buenos Aires and for building the Costanera, from plans made by Forestier. One of the most important recent works is the Avenida General Paz, encircling the city. The chief painters in the traditional manner are Cesáreo Bernaldo de Quirós, the landscape painter Fernando Fader, and Eugenio Dameri. The avant-garde is represented by Emilio Pettoruti, who was awarded the Guggenheim Prize for South America in 1956, and Horacio Butler. Miguel Carlos Victorica, Lino Eneas Spilimbergo,

and Raúl Soldi are painters of repute who do not belong to any particular school. Mauricio Lasansky is an engraver of exceptional talent who has been living in the United States for a number of years. The outstanding sculptor of the 20th century, although a member of the traditional school, was Rogelio Yrurtia, who produced the *Canto al Trabajo*, the statue of Dorrego, and the Rivadavia Mausoleum. Pablo Curatella Manes, Antonio Sibellino, Alfredo Bignatti, and Lucio Fontana are more modern in their approach. Art galleries are to be found in Buenos Aires, in the provincial capitals, and in a few other towns. The most important museums are the National Museum of Fine Art, the National Museum of Decorative Arts, the Isaac Fernandez Blanco Municipal Museum, and the Ernesto Sívori Municipal Museum, all in Buenos Aires; the Juan B. Castagnino Museum in Rosario; and the Rosa Galisteo de Rodríguez Museum in Santa Fé. Argentine art criticism was pioneered by José León Pagano, the author of the monumental work, *El arte de los argentinos*. He was followed by Julio E. Payró, Julio Rinaldini, and Jorge Romero Brest. Art publications have been quite numerous in recent years, mainly through the activity of Editorial Poseidón. Practically all the better daily newspapers feature an art column

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Fernando MÁRQUEZ MIRANDA and Jorge ROMERO BREST

Illustration: 1 fig. in text.

ARMENIAN ART. The Armenians make their first appearance on the historical scene in sources of the 7th century B.C. Their consolidation as a people in the territory that was later to comprise medieval Armenia took place between the 7th and 3d centuries B.C. Many scholars believe that they emerged from a gradual fusion of Indo-Europeans with a pre-Indo-European population indigenous to West Asia and assimilated in the ancient kingdom of Urartu, which flourished in this area (see URARTU). The limited number of words of Indo-European origin in the Armenian language supports the theory that the Armenian people stem from Asia Minor.

The rapid disintegration of the Seleucid dynasty and Armenia's geographic position on the great trade routes between Europe and India favored the formation during the 2d century B.C. of a kingdom free of foreign domination. During the following century an advanced Hellenistic civilization developed which is best exemplified in certain prosperous cities such as Tigranocerta (now Siirt) to the north of the Tigris.

From the 1st to the 4th centuries this kingdom was governed, with the sanction of Rome, by a collateral line of the Parthian Arsacids; consequently, the Persian influence was strong enough to equal that of Rome. Several examples of monumental art have survived from this period (see PARTHIAN ART).

During the 4th century, however, increased pressure brought to bear on the Arsacid dynasty by the new Sassanid dynasty of Persia strengthened ties with Rome to the extent that Armenia became a vassal state of the Roman empire. Moreover, within the country a feudal class formed which adopted Christianity and made it the state religion. This period marks the establishment of medieval Armenia and the beginning of its artistic achievement.

The medieval Christian art of Armenia began to attract the attention of scholars about the middle of the 19th century; early studies, however, were limited to the examination of isolated monuments. Later, more exhaustive studies were undertaken by archaeologists and epigraphists such as N. J. Marr, I. A. Orbeli, T. Toromanian, and the historian of early Christian art, Joseph Strzygowski. Strzygowski not only attempted to link Armenian art with medieval Christian art as it evolved both in the East and in the West but assigned a leading role to Armenia in the early stages of this development. As a result of his work it was possible for the first time to characterize Armenian art and to see it in historical perspective. Nevertheless, Strzygowski's view of the evolution of architectural types from the dawn of Christianity to the end of the Bagratid dy-

nasty in 1045 seems unsubstantiated, since it leaves many gaps. Strzygowski attempts to fill these gaps by presupposing the existence of a pre-Christian architecture that has since disappeared; at the same time, he omits some evidence derived from extant monuments.

Strzygowski's work, with its debatable conclusions, influenced not only Toromanian, who ultimately repudiated his earlier theories, but also other writers, with the result that research in this field became progressively less sound despite certain scholarly warnings against extreme theories.

SUMMARY. Early medieval architecture (col. 717): *The vaulted basilica; The domed, central-plan church; Cruciform churches with three apses.* The later medieval period (col. 721): *The domed hall church.* Architecture of the Armenian empire in Cilicia (col. 724): *Religious architecture; Secular architecture.* Sculpture (col. 726). Painting (col. 726). Minor arts (col. 726): *Illumination; Pottery; Metalwork.*

EARLY MEDIEVAL ARCHITECTURE. A great many monuments from the early medieval period have been preserved. This is the more remarkable in view of the fact that during the early feudal period (4th–9th cent.) the country ceased to exist as an independent state, a large area falling to Persia and the western regions coming first under Roman and subsequently under Byzantine rule. Nevertheless, Armenia produced a native literature and a national architectural style. By accepting the decree of the Synod of Dvin in 554–55, which formed the Armenian Church and rejected the decisions of the ecumenical Council of Chalcedon (451), the Armenian Church established closer ties with Asia Minor, Syria, and Mesopotamia. For some time the attitude toward the Council of Chalcedon remained indecisive, and partisans of Greek Orthodoxy, such as John, Ezzr, and Nerses, became heads of the Armenian Church.

The prevalent architectural forms in Armenia in the 6th century, as in other regions of the Eastern Christian world, were vaulted basilicas and central-plan churches with domes. It has been suggested that function may have determined architectural form, the basilica serving for daily prayer and the domed church as martyrium or mausoleum used for only one annual celebration. However, this theory is not applicable to Armenia, since even in the early period there were but few basilicas and aisleless churches.

The vaulted basilica. Only ruins and some reconstructions remain of the original basilicas at Ereruk (PL. 426; FIG. 719) Kasak, Ashtarak, Eghivard, and the Martyrium of St. Sarkis at Tekor. Although some scholars place these monuments in the 4th and 5th centuries, comparison with basilicas in Syria and Asia Minor and with certain features of Armenian domed churches, as well as evidence from inscriptions and literary sources, would place them rather in the 6th or 7th century. These basilicas were built of ashlar masonry and rested on stepped podia. Two, three, or four pairs of piers supporting arches divided the interior into a nave and two aisles. Examples are found of external blind arcades extending around three sides of the building. In addition to the main apse, there were generally small, lateral ones, covered by half domes, which terminated the aisles. Lateral chambers with entrances from the aisles occasionally flank the central apse (in two instances, these are greatly elongated on a north-south axis), recalling similar features in Syrian churches, as has been pointed out by Jean Lassus and Georges Tchalenko. In one instance, a separate baptistery was erected and attached to the eastern exterior arcade. Frequently the external structure of the apses is polygonal, with either three or five sides. In other cases the apses are built into and completely concealed by the heavy walls. Many of the basilicas have several entrances, some as many as seven. All the extant basilicas were probably vaulted; some, especially in Asia Minor, had gabled roofs extending over both the nave and the aisles; but in others the roof of the nave was raised higher than that of the aisles. Decorative arches, both in the interior and on the exterior, were horseshoe-shaped. Occasionally horizontal stringcourses broke up the surface of the façade. The portals were generally emphasized by columns with carved capitals on which a heavy arch rested.

Sometimes this arch was decorated with a tympanum or surmounted by a gable supported by corbels. The semicircular windows were often decorated with carved moldings or smooth facings. Sometimes the western façade was pierced by windows in groups of two or three separated by colonettes. At Ereruk, two-story twin towers flank the narthex on the west, showing a close affiliation with Syrian architecture.

At Eghivard, Shirvandjuk, Diraklar, and Tanahatvank' there are aisleless, barrel-vaulted basilicas that also belong to this period. Here the vaults are sometimes strengthened by salient arches, forming ribs, supported by attached pilasters. In certain of these basilicas an altar chamber is set apart at the south end with a gallery or ambulatory around the abutments of the vaulted arches. Thus it is evident that, in longitudinal churches (and, as will be shown below, in domed, central-plan churches as well), the plan of the altar end was not determined by liturgical functions.

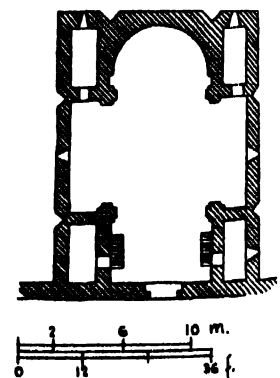
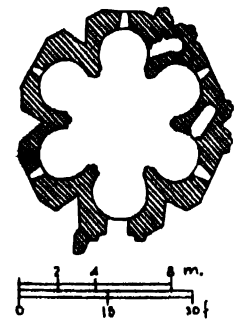
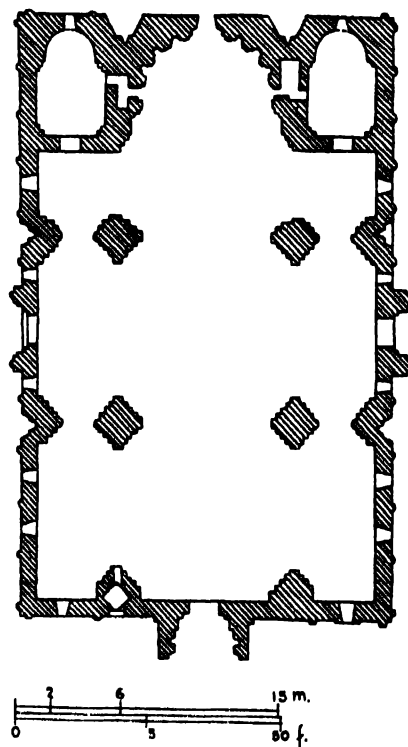
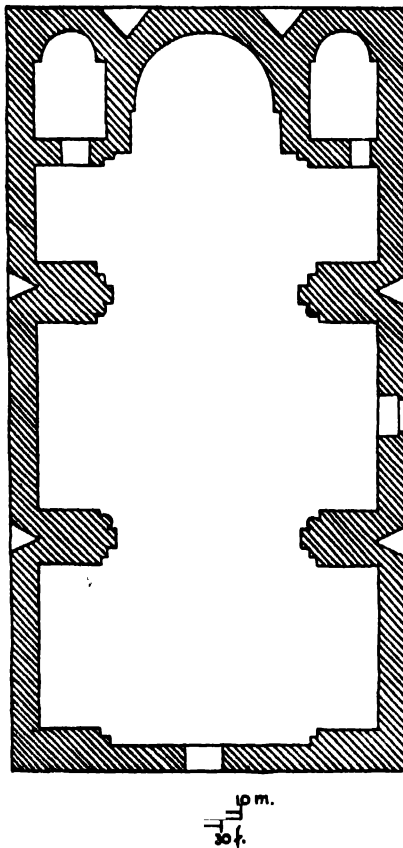
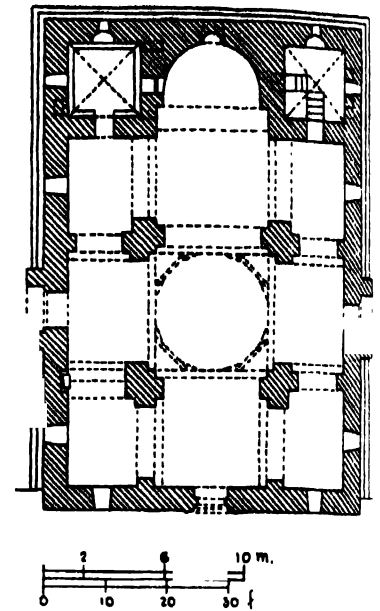
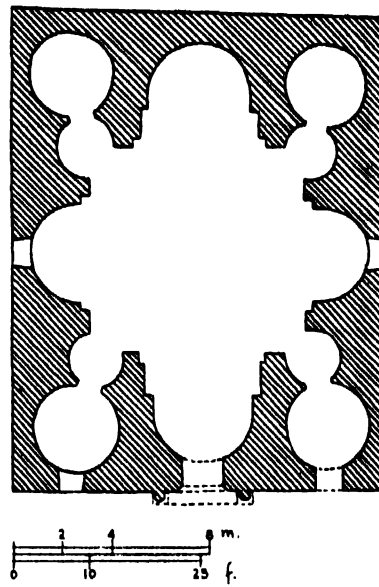
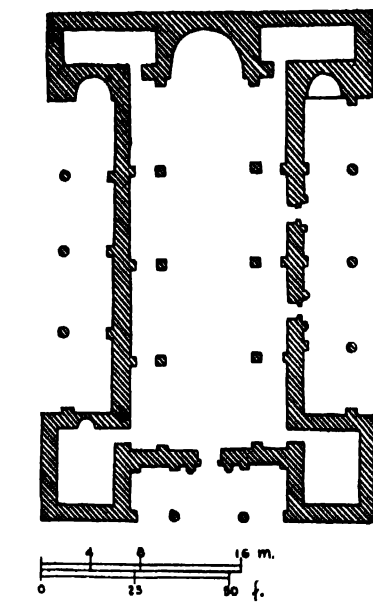
The domed, central-plan church. Extant domed churches in Armenia date from the 7th century; however, the formal precision of their plans and the quality of their construction bear witness to an earlier tradition, as does the continuous recurrence of the same traditional elements in later phases.

The following monuments have been definitely dated in the first half of the 7th century: the tomb of John of Bagaran at Avan near Erevan, dated 590 or 601; the church erected by But and his wife, Anna, at Bagaran between 624 and 636; St. Gajané at Echmiadzin (PL. 427), erected by the Catholicos Ezzr between 630 and 636; the Church of St. John the Baptist at Bagavan, also built by the Catholicos Ezzr, 631–39; the small trefoil at Alaman, erected by Gregory the Illuminator and his wife in 637; the cathedral at Mren, begun by David Saharuni in 639; and Zvart'nots, erected by Nerses "the Builder" in the mid-7th century. To the 8th century belong the churches connected with the name of the Catholicos John of Odsun (717–28), such as the church at Odsun, the church at Aramus built by the Catholicos David (728–41), and the small church at T'alín, built by one of the two Nerses of the Kamsarakani family, both of whom were active about the end of the 7th century and the beginning of the 8th. Exact dates have been established for the Church of the Apostles on an island in Lake Sevan (874); the main church of the Tat'ew monastery (PLS. 425, 428), begun in 895 and completed in 906; and the church at Shirakavan (Sirakavan) (PL. 428; FIG. 719), then the Bagratuni capital, built in either 897–98 or 899–900.

These monuments, which are securely dated in the 7th, 8th, and 9th centuries, clearly illustrate the gradual evolution of the ancient Armenian domed church over a period of three centuries, and in their structural elements it is possible to study the forms that are basic to later Armenian architecture.

The simple trefoil, or cruciform, plan had a variety of contemporary elaborations, such as the more complex quatrefoil of Echmiadzin Cathedral, with the dome carried on four free-standing piers, built after A.D. 600 and rebuilt in the 10th and 11th centuries. In some of these churches the four niches, or apses, are pierced by a series of arcades leading out onto a large circular ambulatory surrounding the whole church. In addition there were the church with the enlarged central-domed square bay abutted by three-quarter niches opening into corner chambers, and the church of rectangular plan with the dome resting on four free-standing supports and the apsidal niche set back, accentuating the interior length, and flanked by two lateral chambers.

The treatment of the façade of these variations of the trefoil church is especially interesting. In some examples the apse is buried in the thickness of the wall, so that the irregular form of the interior plan is masked, as in the domed, cruciform Martyrium of St. Gajané (PL. 427) at Echmiadzin, built between 630 and 636, and the Cathedral of Odsun. In others one or all apses protrude at the exterior and are polygonal, as in the churches at Bagavan (631–39) and Mren (639). It is clear from these examples that there exist variations of the domed church comparable to those of the basilica. The most significant innovations in the development of this group of churches



Plans of Armenian churches: *Left, above:* Ereruk, the Basilica; 6th-7th cent. *Below:* Shirakavan, church of King Smbat I, late 9th cent. *Center, above:* Avan, church, early 7th cent. *Below:* Ani, the Cathedral, 989-1000. *Right, from top to bottom:* Echmiadzin, St. Gajané, 630-36. Ani, church of the Abugamrent family, late 10th cent. Harichavank', domed church, ca. 1201.

are the construction of the central dome on an octagonal drum and the clear separation of the area of the presbytery from that of the congregation by the extension of the building to the east (St. Gajané, Echmiadzin).

In the nearly contemporary churches of Bagavan and Mren, the presbytery and the congregational area are connected. In the Cathedral of Odsun the structure is further developed: the eastern end of the building is lengthened, and an external arcade is added on three sides. Inside, the transitions from the square plan to the octagon of the drum and from the drum to the dome are achieved by squinches. In all the domed churches of ancient Armenia, until the break in the 9th and 10th centuries (see below), the dome rising over the central square area rests on two or three series of squinches which connect it with a drum that is octagonal both inside and out. These buildings are simple and austere, built of ashlar masonry with moldings over the door and window embrasures that are often carved. The ornamentation was gradually enriched. For example, at Mren and Odsun there are radiating ribs in the interior of the dome which are decorated with a carved relief: eight at Mren, sixteen at Odsun.

The Cathedral of Avan, completed between 609 and 611, is massive in structure and recalls, in the details of the portals and window moldings, the basilicas at Ereruk (FIG. 719) and Kasak (PL. 427). It is the only extant church that has radiating circular chambers.

The church at Bagaran, begun by But in 624 and completed after his death by his wife, Anna, is of marked interest. The church is a development of the niche-buttressed quatrefoil, the four lateral apses being pentagonal on the exterior and equal in area to the central square. Four free-standing piers support the central dome. For the first time there are windows in the center of the apses similar to those later used in St. Gajané, Bagavan, and the Cathedral of Mren.

The great church built by the Catholicos Nerses the Builder near Echmiadzin between 645 and 660 occupies a special position. It was called Zvart'nots, "temple of the guardian angels," in commemoration of the angels who appeared to Gregory the Illuminator, and was later transformed into a martyrion dedicated to that saint. The church was destroyed in the 10th century; hence a reconstruction on the basis of the excavations (PL. 427) is fraught with problems. All that can be said with certainty is that the plan was quatrefoil with a central dome and four apses, was surrounded by an ambulatory, and had several floors or levels.

The small church built between 728 and 741 by the Catholicos David at Aramus repeats the plan of the church of the Holy Virgin at Avan except that the diagonal or corner chambers are rectangular instead of round. Analogous plans were used in several 9th-century structures, such as the Martyrion of St. Hripsimé at Echmiadzin and the churches at T'argmantchatsvank', Aideshate, and Adiaman. In these last the ornamentation of the dome, exterior as well as in the interior, is more elaborate and in some respects anticipates the next period.

Cruciform churches with three apses. In addition to the early domed churches of relatively complex plan, there were built between the 7th and 9th centuries a number of churches of a simpler plan with three rectangular arms, called *croix libre*, or cruciform, such as those at Alaman (637), Bdjni, Mazardjuk, Kosh, and Ashtarak. A second type of trefoil plan with a rectangular nave replacing the western niche occurs at Maghmudjuk and Lmbat and in the small church at T'alín, which belongs to the early 8th century rather than to the later 7th, as previously believed. These churches have polygonal or rectangular apses and corresponding lateral chambers at the east end, and the transition from the square base to the circular dome is made by squinches.

THE LATER MEDIEVAL PERIOD. The end of the early medieval period of Armenian architecture is marked by the break that occurred in the 9th and 10th centuries. Under the caliphate of Harun-al-Rashid, Armenian princes had already begun to gain power and, despite numerous defeats, they succeeded in

gradually strengthening the country both politically and economically. A vast domain was united under the Bagratid princes by a policy of shrewd negotiation and military conquest, with the result that the title of "Prince of Princes" was conferred on Ashot Bagratuni by the caliph, and in 887 or 888 the caliph presented him with a crown, thereby recognizing him as king.

The capital of the new kingdom was first at Bagaran, then at Shirakavan, and finally at Ani, where it remained until the middle of the 11th century. During this period of approximately one hundred and fifty years, other regions were united under other Armenian nobles, among them the domain ruled by another branch of the Bagratid family with its center at Kars, and the province of Vaspurakan in the region of Lake Van, united under the Ardzrunis. Commerce with foreign countries played a key role in maintaining these independent Armenian nobles in power, and even after their fall and the loss of Armenian independence during the 12th, 13th, and 14th centuries, foreign trade continued to flourish.

The domed hall church. The architecture of the period of the Armenian kingdoms, from the 9th century on, is characterized by a keen interest in the revival of ancient forms, which reappear in a variety of architectural types. Examples are the square churches with niches and a dome at Mastara, Voskepar, Kars, Harichavank', and Artik. The simple trefoil or quatrefoil church and the polyapsidal basilica, both with a central dome, continued to develop, resulting in new forms based on the old. Nevertheless, a completely new form was evolved at this epoch and enjoyed popularity not only under the Armenian kings but also during the subsequent period. Strzygowski designates it as the domed hall church, or *Kuppelhalle*.

The church at Mastara, dating from the second half of the 9th century, is an interesting example of a traditional form reinterpreted. The dome over the square bay is buttressed by four semicircular axial niches with openings approximately two-fifths the length of the side of the square. The central area is thus unified; and interior spaciousness is achieved by elevating the dome. The transitional church of Mastara exemplified a tendency toward greater complication of decorative motifs, which manifests itself inside the dome and particularly in the tripartite ribs and multiple cornices of the octagonal drum. Two lateral chambers are added to the eastern end of the building. This style, introduced toward the end of the 9th century and continued through the 10th, culminated in the replacement of the simple squinch construction (as at Mastara and Voskepar) by pendentives and the use of a decorative blind arcade around the drum (as in the churches at Kars, ca. 930, at Artik, and at Harichavank', ca. 970).

In the early 10th-century cathedral at Aght'amar (PL. 435), built on an island in Lake Van between 915 and 921 by the architect Manuel, the general plan of the earlier church of the Holy Virgin at Avan was followed; however, the subsidiary western chambers were eliminated and the eastern chambers reduced in size. The many projecting walls of the building give a fluid and picturesque impression that is accentuated by the three richly carved bands of relief extending around the building and, more exceptionally, around the drum.

The decorative trend of Mastara and Aght'amar is developed further in the churches with multifoil plans and six or eight niches, as at Ani and other sites. Although the simple trefoil plan is retained in some cases, the highly developed culture and greater artistic life quite naturally stimulated the development of new forms based on the quatrefoil plan. The new trend in ornamentation made use of blind arcades and decorative triangular slits on the exterior. In some instances the plan was augmented by additional side chapels, as at Airivank' on Lake Sevan, Agrak, Zarindj, Khdzkonk', Gindovaz (936), Sanahin, and the citadel church at Ani.

Within a 20-year period beginning about 970, a number of other six-niche churches were built at Ani, all of the same type as the church of the Apughamrentz (Abugamrenč) family and the so-called Church of the Good Shepherd outside the walls of Ani (completed before 980; PL. 433; FIG. 719).

It is erected in two stories and is notable for its highly formalized, elaborate ornamentation. The same tendency to break the surface both of the walls and of the drum with triangular niches occurs in churches with an octofoil plan, such as the ones at Varzakhan and Irind and that near Eghivard called by scholars "Zoravar" but locally known as "Kargavank'." The only example of a large octofoil church ornamented by a blind arcade is the massive Church of the Holy Savior erected at Ani in 1036, the dome of which was restored in 1342. It is interesting to note that the continuous blind arcade with slender engaged colonnettes, also used in Ani in the church erected by King Gagik and in the cathedral, derives, according to some scholars, from ancient Chaldean traditions.

In 874, at the close of the earlier medieval period, a church on a simple trefoil plan with the dome on squinches was built on an island in Lake Sevan, yet in a church built in the 10th century in the same area the dome rests on pendentives. The highly ornamented large trefoil basilica at T'alish belongs to the third quarter of the 10th century. Here four large piers support the dome on pendentives, representing a connecting link between old and new architectural forms.

The conscious desire of the Armenian nobility to consolidate their right of succession by reviving ancient traditions is most clearly expressed by the decision of King Gagik (989-1020) to construct in his capital at Ani a replica of an ancient church then in ruins near the city of Echmiadzin. Archaeologists have identified this church, begun at Ani in 1001 and completed some 11 to 14 years later. It was a faithful copy of Zvart'nots, built by the Catholicos Nerses in the middle of the 7th century. The hand of the 11th-century artists is apparent only in some decorative details, and even these make use of older motifs.

From the very beginning of the new epoch, however, the most widespread architectural type was the domed hall church, or *Kuppelhalle*. There are three early prototypes, at Ptghni, T'alish, formerly called Arudj, and Shirakavan, but the date of construction has been established only for that at Shirakavan, built by Smbat I (890-914) at the Bagratuni capital of Shirakavan. The chief advantage of this new plan is its spaciousness and unity. The drum over the central square is abutted by arches springing from short projecting walls that do not obtrude on the eye, and the intervening spaces appear as niches. These recesses have no independent function here, but are subordinated to the concept of unified space that is characteristic of the period. The triangular recesses in the exterior have become more important. At Shirakavan they occur not only at the eastern end but also on the side walls. Structurally they are justified because they lighten the mass of the exterior walls. In the three examples given, certain other elements were also carried over from the earlier period but gradually deleted subsequently. At Ptghni the dome is supported by corner squinches which are replaced by pendentives at T'alish. These support the circular cornice on which the round drum is placed and which also appears cylindrical on the exterior.

The domed hall churches of the second half of the 10th and the entire 11th century are reduced by about one-third the former size. Height is increasingly emphasized, and the east and west ends, which previously had been equal in length to the central square, are shortened. As the plan tended to become formalized, the two triangular recesses on the exterior were either eliminated or lost their structural significance, retaining mere decorative value. Blind arcades subdivided into 12 and later 16 arches gradually replaced the smooth surface of the octagonal drum, but at a still later period the drum became cylindrical and undecorated. The same development occurred in other types of churches.

Buildings preserved in the city of Ani provide the connecting links in this gradual evolution. They are the Church of the Holy Apostles, presumably the seat of the bishop, and the cathedral. The Church of the Holy Apostles has a complex plan. It is a large quatrefoil with a slightly lengthened east-west axis. The entrances are the north and south, facing the domed square. There are four large corner chapels which are particularly elaborate in plan. What may be looked upon as five separate sanctuaries are incorporated into a single structure

by rectangular exterior walls decorated with blind arcades and interrupted by two triangular recesses on either side.

Structural methods, decorative motifs, and general appearance indicate that the Church of the Holy Apostles belongs to the early 11th century, although some architectural features were retained from previous periods.

Historical records ascribe the Ani Cathedral (PLS. 433-435), built between 989 and 1000 by Katramidé, the wife of King Gagik, to the architect Trdat, who had earlier constructed the domed hall church at Argin and may later have been the architect for the copy of Zvart'nots at Ani. The Cathedral, a cruciform domed church with four free-standing piers, is imposing in its interior spaciousness. The exterior is decorated with continuous blind arcades and paired triangular recesses. It underwent major restoration in the 12th and 13th centuries, when Ani flourished as a commercial center, and in the 14th century the drum and dome were destroyed by an earthquake. Further research, however, is necessary to identify the various stages of construction.

The period of the kings in Armenia is characterized not only by the reelaboration of older structural forms but also by the conscious assimilation of older ornamental motifs (acanthus leaves, vine leaves or branches, and pomegranates, interlaced), executed, however, with the uninspired exactitude typical of the period. On the other hand, from the beginning of the 11th century there is evidence of Islamic influence.

With regard to the masonry, until the end of the 10th century the rectangular blocks were beveled and the mortar did not extend to the edges, so that the pattern of the stonework was accentuated as in the Abugamrenč church, the low part of the façade of the cathedral at Ani, and many monuments of the 7th through the 10th centuries, such as St. Gajané at Echmiadzin, Mren, Kosh, Mazardjuk, Maghmudjuk, Mastara, Adiaman, Dvin, and Zarindj. From the 11th century on, this was no longer the practice, as the later examples at Ani show.

During the period of Armenian rule, through the 10th and 11th centuries, the cities expanded rapidly as a result of increased industry, trade, and currency exchange. By adopting a flexible attitude to the many political and religious changes, the merchant class was able to maintain and perpetuate Armenian culture despite the decline of Armenian power and the subsequent subjection of the country to the Byzantine Empire and independent Moslem rulers. The cities of Greater Armenia were autonomous during the 12th, 13th, and 14th centuries; this gave new impetus to architectural activity.

ARCHITECTURE OF THE ARMENIAN EMPIRE IN CILICIA. *Religious architecture.* After the Seljuk Turks conquered Armenia in the second half of the 11th century, the aristocracy migrated to Cilicia in the Taurus Mountains. Armenian Cilicia is unique among the small principalities founded on Greek territory for having sided with the Crusaders in the 12th century. It maintained continuous contact not only with the Byzantine empire but also with various European states and facilitated trade between Genoa and Venice and the East. As a result the art of Europe permeated that of Armenia. Artistic activity reached its peak during the 12th and 13th centuries but was arrested by the conquest of Armenian Cilicia by the Mamelukes of Egypt in the second half of the 14th century. The secular architecture of the Armenian princes in Cilicia, an imitation of that of the French feudal lords, is celebrated; however, no religious buildings worthy of note are known from this period.

In Armenia proper one basic church plan prevailed without exception from the 12th century on: the domed hall church. Examples are the churches at Ani built by Tigran Honents (1215) and Baghtagek, as well as those at Goshavank' (Norgetik) (1191), Agarcin, and other, older ones. However, few of these later examples retain the grandeur and unity of rectangular interior space of the earlier churches; they are constructed on a cruciform plan with but an elongation of the east-west axis; the dome rises over the intersection of the axes, and there are usually two-story corner chambers. Small stairways under the intersection lead to the second-story chapels. The elevation of the chancel, which supports the triangular altar base,

plays an increasingly organic role in the compositional effect, and its side walls are ornamented. The pointed arch begins to replace the horseshoe and semicircular arches in examples at T'alış (1201-14), Hovhannavank' (1216-21), Geghard (1215), St. Stephen near Garni (1212-17), Noravank' (1221), Ketcharus, K'aravank' (1273), and others. In addition to the domed hall churches, there now appear two-story churches, as at Norgetik (1291), Eghivard (1321), and Noravank' (1339), as well as small chapels, mostly with domes, such as those at Ketcharus and Haghbat.

Secular architecture. Secular building was especially prolific during this new stage in the development of Armenian architecture. Excavations lasting over a period of 15 years at the former capital, Ani, in medieval times an active center for trade and industry, have disclosed a single-arched bridge with a span of about 100 ft., caravanseries, palaces, fortifications, city walls with a gate, dwellings, workshops, small stores, and finally the *djamatun*, a building for both civic and religious functions, situated beside the churches or within the monasteries, which evidently first appeared during the epoch of the Armenian kings. The structure of the *djamatun* varies, but two basic forms may be distinguished: the square with four piers, and the structure consisting of two intersecting arches, generally with an overlap at the center, occasionally illuminated from above by a clerestory light. The bell tower also made its appearance in this period. The great monasteries of Sanahin (PL. 434), Haghbat, and Tat'ew housed libraries and schools.

Armenian architecture from the 13th through the 14th centuries reflected on the one hand a continued development of indigenous forms used in the period of the kings, and on the other incorporated some foreign elements in both ornamentation and structure. For example, the grapevine motif, found on the earliest monuments and again in the 9th and 10th centuries at Mastara, Ptghni, T'alış, T'alın, Artik, Shirakavan, and Aght'amar, became a favorite theme in the later period at Ani. Similarly, the pomegranate tree and, less prominently, the lancet, the rosette, and a few other motifs appear during all three epochs. The frequent use of these Islamic motifs bears witness to the taste for innovation and borrowing from foreign cultures. Toward the end of the 12th century two minarets were erected at Ani. And on the richly decorated façades of the churches built by Tigran Honents, in the Fortress of the Virgins, and in the church of Baghtagek, animals were depicted, mostly in action. The characteristic portals of the palaces have either a semicircular or a pointed arch in a rectangular frame with stars, crosses, or geometric patterns in stonework of two colors. The interior walls of the palaces were finished in sculptured plaster and frescoes typical of Islamic Persian art, used in the two caravanseries and in other buildings at Ani and throughout Armenia. Stalactite ornamentation and bas-relief decoration with animal and human figures came into wide use at this period.

Finally there are the *khatchk'ars*, tombstones or memorial cross stones, which in the 10th and 11th centuries were decorated with a cross or a vine or floral motif in relief against a smooth-faced background. At the later period these appear against all-over background tracery derived chiefly from Islamic textiles but also from early Armenian motifs, thus giving rise to a strange blending of styles and resulting in a unique effect. The small, precise, sharply defined geometric pattern exhibits insistence on minute differentiations; occasionally stylized animal figures are introduced into the linear interplay of the predominant leaf and floral designs. Noteworthy in the wealthier dwellings are the small wall niches crowned by an arch and frequently ornamented luxuriantly with carved fretwork. During the 14th and 15th centuries, the period of decline, the quality and richness of carving noticeably decreased.

The last period in which there was a distinctive Armenian architecture was during the 16th through the 18th centuries, at the time of the Persian and Turkish wars. In the church architecture of Greater Armenia the plan with four free-standing piers was predominant; however, the central bay was not

always domed. At Mugni (1661), at Shativank' (1656), and in a few other examples the churches are roofed over by a barrel vault. In 17th-century monuments and even in the minor arts the influence of the European baroque became evident.

SCULPTURE. Little early Armenian sculpture remains, usually in conjunction with the architecture. Outstanding in the early feudal period are the commemorative pillars, rectangular blocks 6 ft. high or more, placed on a square base. Ornamental motifs and crosses were carved in low relief on the four faces of the shaft as well as on the base. In the 10th century this type of monument was replaced by the *khatchk'ar*, a vertical flat stone slab on a profiled base, and new motifs appeared. Beginning with the 15th century, the whole surface was covered with decorative carving, derived mainly from contemporary textiles, which became increasingly richer (PL. 435).

Bas-reliefs representing scenes from the Scriptures, portraits of the founders of the church, and single figures of the Virgin, angels, and similar subject matter were inserted in the façades of churches, above the doors and window embrasures, and, more rarely, on baptismal fonts. On the churches at Mren, Ptghni, and Aght'amar (PL. 435) there are portraits of the founders, sometimes depicted in scenes from daily life, such as hunting and feasting; the master stonemasons and architects appear in reliefs at Zvart'nots. At Maghmudjuk, Odsun, and Kars there are figures of saints. In the copy of Zvart'nots made at Ani by King Gagik there is a group of the donors with a model of the church, carved in the round, let into the lateral wall of the church. In the 10th century similar sculptures of donors are found at Haghbat (PL. 428) and Sanahin, and in the 13th century at Harichavank' and in the church of Baghtagek near Ani. Carved reliefs were used more and more frequently on the church façades in the 13th and 14th centuries, and it is at this period that the figures of the apostles first appeared and new compositional schemes were evolved.

PAINTING. Painted wall decorations are rather the exception in Armenian churches as a result of the strict regulations which governed their use. Some experts even maintain that all known wall paintings occur either in churches that became Greek Orthodox during one of the periods of mass conversion to the Greek Orthodox faith or in churches that were Greek Orthodox at the time of their construction, such as the impressive Church of St. Gregory at Ani, built by Tigran Honents in 1215 and almost entirely covered with wall paintings representing scenes, some from everyday life. In accord with the general political orientation of the Greek Orthodox Armenians to Georgia, these paintings often bear Georgian inscriptions.

MINOR ARTS. The minor arts in Armenia are represented by metal objects, textiles, embroidery, and especially by illuminated manuscripts (PLS. 429-432) and pottery.

Illumination. The earliest dated illuminated manuscript, comprising a few canon tables, goes back to 887; it is followed by the famous Gospel of Queen Mlk'e (PL. 431), dated 902, and in 989 by the Echmiadzin Gospel, which was attributed to 6th-century Syria until it was identified as belonging to the Armenian iconographic tradition of the 10th and 11th centuries. The style of these manuscripts is highly decorative, but there is a rigid adherence to dogma. Most striking is the influence of the Hellenistic tradition, but Byzantine influence is apparent later as well as elements from the style of illumination found in Syria, Palestine, Asia Minor, and Persia. The color range derives from late Hellenistic manuscripts, but other influences are seen in the simplification and flattening of the figures and the schematic treatment. These canon tables and full-page miniatures are simple and monumental in composition. In the early period neither decorative initials nor marginal illustrations were used, but the first pages of the codices have golden initials which were repeated at the beginning of each chapter. From the 10th century on a highly stylized pattern becomes characteristic of Armenian manuscripts; it makes use of such elements as zigzag lines, disk patterns, and diapered radiating

lines paralleling other Eastern Christian and pre-Romanesque traditions. As early as the 11th century there appear side by side with these sumptuous works a more sober style presenting illuminations from a more popular point of view. The 12th-century manuscripts show highly formalized title heads and initial letters employing the twisted-rope design, and in the second half of the century the margins are ornamented. The art of illumination in Armenia reached its peak at this time. Apart from the various schools that flourished in the monasteries of Armenia during the 13th and 14th centuries, another school developed in Armenian Cilicia which reflected the refinement of court life due to its closer connection with European culture. Meanwhile, the two main tendencies continued in Armenia proper: the plastic, more naturalistic style and the calligraphic style in which all elements — title pages, headings, letters, marginal decorations, and even miniatures of the human figure — were subordinated to decorative effect. Thus, here, as in architecture, Islamic elements coming from Persia assumed an increasing importance. In the Cilician school, however, the compositions with human figures achieved a level of subtlety and elegance comparable to that of European miniature art of the period, chiefly because of faithful observation of nature. In the 14th century this skill of representation gave way to uninspired conventions. The Cilician tradition of miniature painting nevertheless survived, continued by the Armenian colonizers of the Crimea, Italy, and Iran and in several monasteries of Greater Armenia, such as that of Tat'ew. The Khizan school from the 14th century through the 17th continued the flat, calligraphic style, using a limited palette and expressionistic stylization of the figures against a purely ornamental, closely patterned background. The greater independence of the iconography of evangelical scenes from canonical dogma reveals a spontaneous and naïve interpretation of the influences of late Islamic art. The influence of the European graphic arts finally reached Armenia in the 17th century. Yet despite the many foreign influences and the unevenness and complexity of its development, Armenian manuscript illumination has an unmistakable national character.

Pottery. Thanks to extensive and systematic excavations at Dvin and Ani, both early cultural centers of Armenia, many examples of pottery have come to light which can be traced back to the prefeudal period. In spite of the unmistakably national character of this art, one notes the influence of Georgia and Azerbaïdzhân (Azerbaijan) as well as Persia, Mesopotamia, Asia Minor, and the Far East. Of special interest in unglazed pottery are the large round vessels for storing oil or wine, polished on the outside and encircled by a decorative band with incised designs of animal or human silhouettes, plants, and geometric motifs. It is possible to distinguish this purely utilitarian pottery from the so-called "mercury pots," much smaller, spheroid-conical vessels of thick, unglazed gray-green clay, close-textured and nonporous, with small openings and variously decorated. It is believed these served for transporting precious liquids, such as perfumes and quicksilver. Glazed pottery of red clay with incised animal and figure patterns is known from the 9th–10th to the 13th–14th centuries, depending on the date given to other objects found in the same excavations. In addition, there is a delicate earthenware of soft, porous clay decorated with flat, incised motifs and small areas where the clay is pressed so thin that the blue or colorless glaze is transparent after firing. These whitish-blue, semitransparent cups, as well as lusterware and a few other types of pottery, have been found both at Dvin and at Ani. It is possible to distinguish imported ware from native products both by the materials and by the decorative motifs employed.

Metalwork. There was comparatively little work in gold or with precious stones. Among church inventories, of particular interest are a triptych with a portrait of King Het'um II of Cilicia (1289–1307), executed at his order, and numerous reliquaries for religious objects, with images of saints, from the 14th century, made at the behest of a member of the Proshian family. Silver bookbindings which were executed

from the 13th through the 15th centuries show a certain decadence in the representation of the human figure. The Dvin excavations have revealed articles of personal jewelry from an earlier medieval period which are of a much higher level of workmanship. Table-service articles made for the lords of Cilicia by master craftsmen unite Occidental figures of the Crusaders with Oriental patterns. An ornamental wine goblet dated 1549 is of particular interest.

In this brief survey of Armenian medieval art, mention should also be made of wood and bone carving, embroidery for personal and religious ceremonial purposes, and fabrics, notably figured linen. Examples of these may be found in many European collections, which are at present being augmented by systematic excavation.

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Georg TSCHUBINASCHWILI

Illustrations: PLB. 425–435; 1 fig. in text.

ARMORY SHOW. See AMERICAS: ART SINCE COLUMBUS.

ARMS AND ARMOR. Simultaneous discussion of arms and armor may be justified from an artistic point of view, in spite of differences in material, manner of utilization, and structure. Arms and armor, as means of offense and defense (this for all practical purposes puts them in the class of tools), are related in their primary functions; but, more important, they are related by the significance they have usually assumed — a significance transcending their immediate utilitarian import — as objects intended to excite fear, as embodiments of supernatural forces, or as symbols of power and magnificence. For this reason their essential forms, well worth noting for themselves or their historical and other associations, came to reflect the taste of various periods and artistic centers. At times, in their design and decoration, they became truly individual creations.

SUMMARY. Arms and armor as works of art (col. 729): *Primary technical functions of arms and armor; Secondary functions and meanings (magico-religious and display); Material, form, and decoration.* Armor as "architecture" (col. 743): *The armed warrior; War machines.* Centers of production and armorers (col. 749).

ARMS AND ARMOR AS WORKS OF ART. From the art-historical point of view it might be possible to make a distinction between arms destined exclusively, or mainly, for use in war and those whose chief function was display; in other words, between arms manufactured chiefly for efficient performance and those fashioned for the sake of their decorative qualities. Such a distinction, however, would not be borne out by a more careful examination. The military, psychological, and social functions are, in fact, closely related. Until the 19th century the meeting of two armies had the quality of a spectacle, one whose importance should not be undervalued, in which the display of arms played an essential part both in inspiring fear and as an index of power. In the pre-Christian era weapons were assigned a magico-religious power that did not completely disappear in the Christian West. An example is the power of suggestion and propitiation of the cross on shields, garments, and banners. Armor, perhaps because its peculiar form implies strength and aggressiveness or because its mass suggests striking power and impregnability, has always served not only as a potent mechanical extension of the human figure but also as a means of transposing the individual, with the aid of supernatural forces, from his normal condition of life to the heroic condition of battle.

It should furthermore be noted that weapons destined for display or symbolic use nearly always have their origin in arms intended for combat. The combat weapon, in turn, almost always has formal elements that are not strictly imposed by the requirements of material efficiency. These may be purely ornamental, or they may be distinctive insignia of the rank or personality of the warrior or of his group.

For this reason consideration of arms and armor from an esthetic point of view cannot be limited to ceremonial arms or weapons of chiefs, and even less to pieces of exceptional decorative richness. It must take into account their typological development, the history of their forms, which express their primary function with more or less purity of design. On the other hand, it should not be overlooked that certain "secondary" functions may enrich forms and decorations to the point of favoring the creation of objects of unique artistic effect.

Primary technical functions of arms and armor. Concern with efficient performance (capacity to strike and protect, ease in handling, durability, strength, etc.) obviously constitutes the fundamental fact in the history of the development of arms. Because of the decisive importance weapons have always had in human life, in hunting and in war, the greatest resources of technical ingenuity have been dedicated to their production. Even among groups where common utensils and furnishings are few and relatively unspecialized, a rich array of technically advanced weapons is often found. Until the development of modern industry, the production of such utensils had represented the highly individualized and skilled work of craftsmen (see **HANDICRAFTS**). It is certain, then, that long before man

made nonmilitary machines, he had fabricated mechanical weapons, such as the bow and arrow, which was known from the end of the Paleolithic era and was diffused among populations that were unfamiliar even with the wheel until the advent of European colonization.

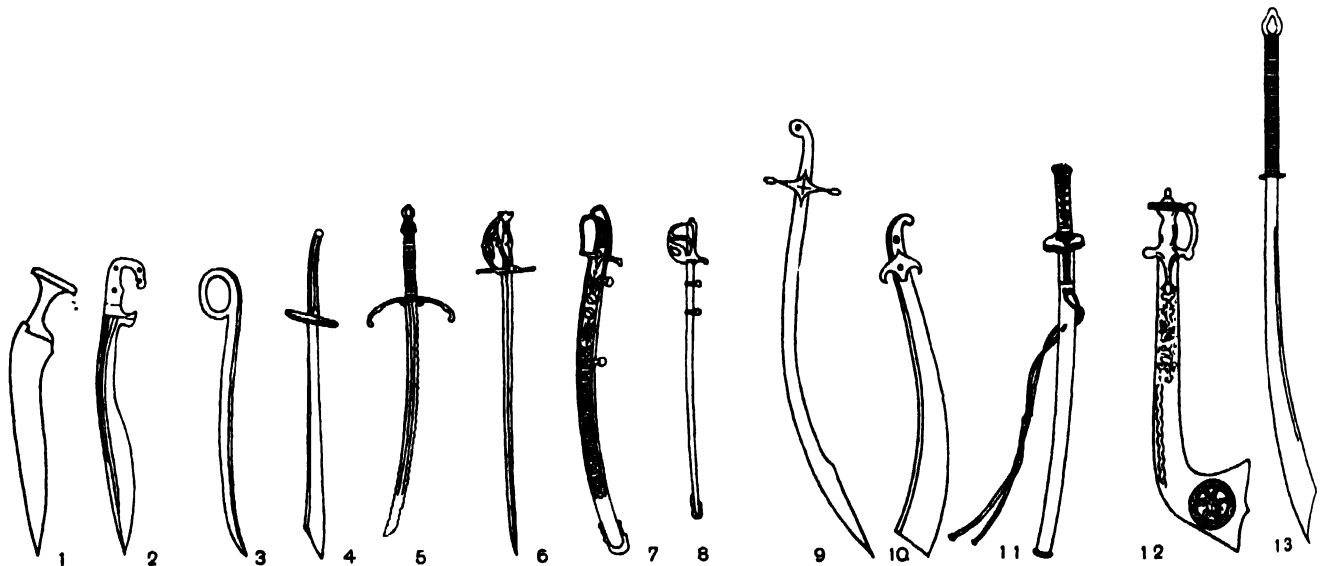
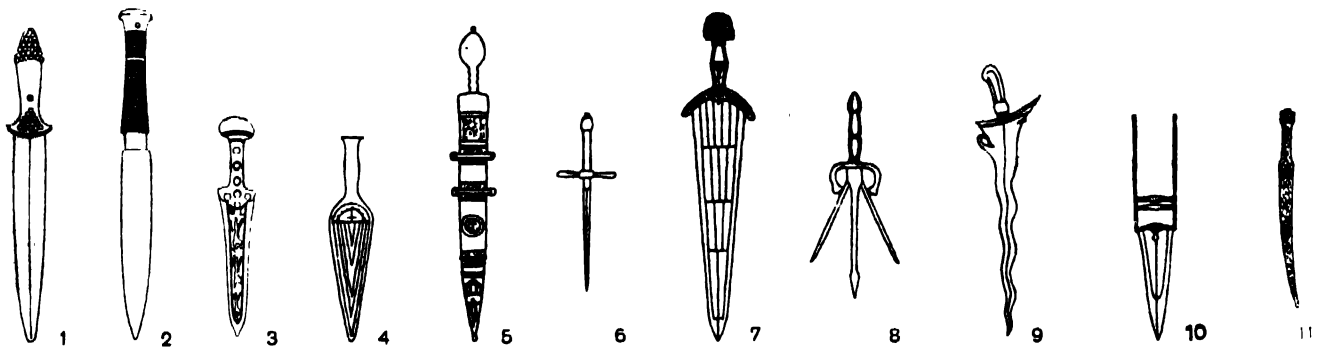
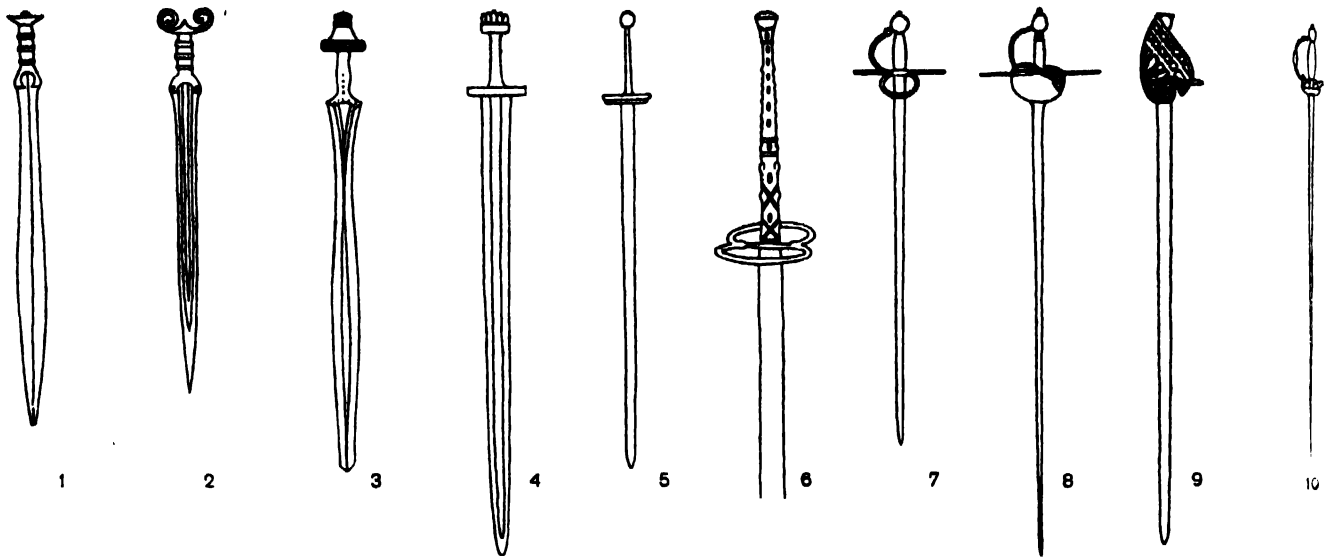
Nor has the primary requisite of functionality ever yielded to other requirements. Even in the case of the noblest instruments — for example, the Japanese sword, well known both for its moral and symbolic connotations and as the expression of a decisive "artistic will" — the principle of functionality remains ascendant. The 14th-century Japanese patriot Masashige Kusunoki, in fact, wrote in his precepts: "Swords are of value when they can cut to the bone. No importance need be given to their ornamentation." And it is interesting to find an analogous example (cf. the researches of E. Salin) in the damascened-iron Merovingian swords of the early Middle Ages in Europe, in which a refined metallurgical technique combined a powerful cutting edge with the esthetic effect due to the austere simplicity of these blades.

In the West weapons began to engage the attention of great artists, such as Francesco di Giorgio and Leonardo da Vinci, chiefly during the Renaissance, when artists, especially architects, became professionally interested in the mechanical arts — not from the standpoint of embellishment and decoration but from that of functioning and operation. Not inconsistently, artists were the ones to develop a true science of military architecture and engineering, achieving a harmony between functionality and esthetic form that has remained unparalleled. Designing of arms continued to be important until the modern era, when methods of offense (explosion, fire, nuclear weapons, chemical warfare, etc.) and defense (underground shelter, radar, etc.) became such as to bring about the dissociation of weapons from the very concept of handcraft.

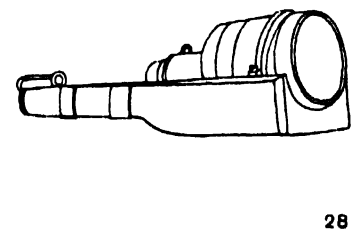
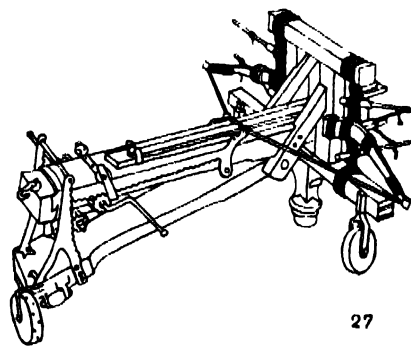
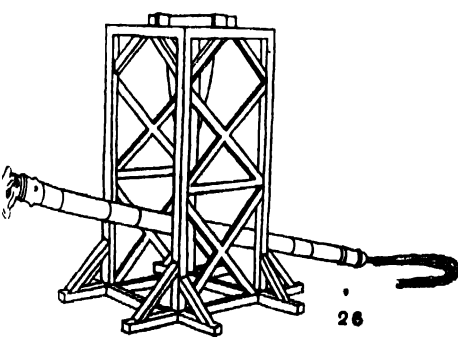
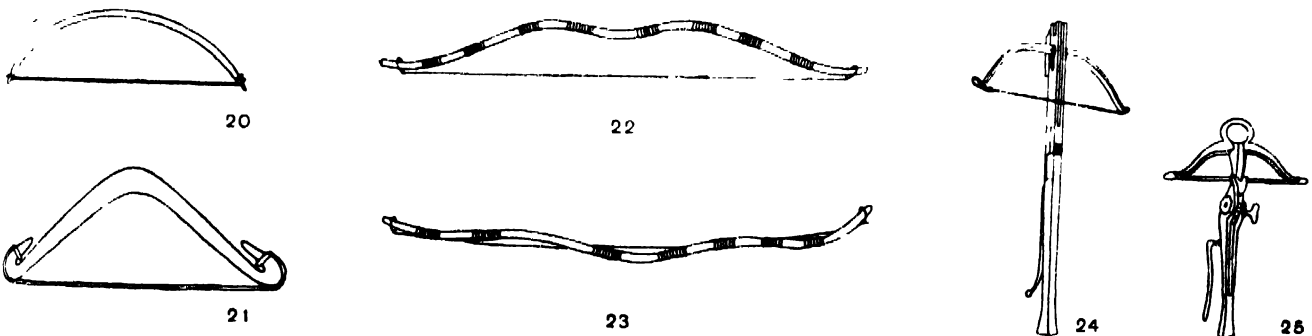
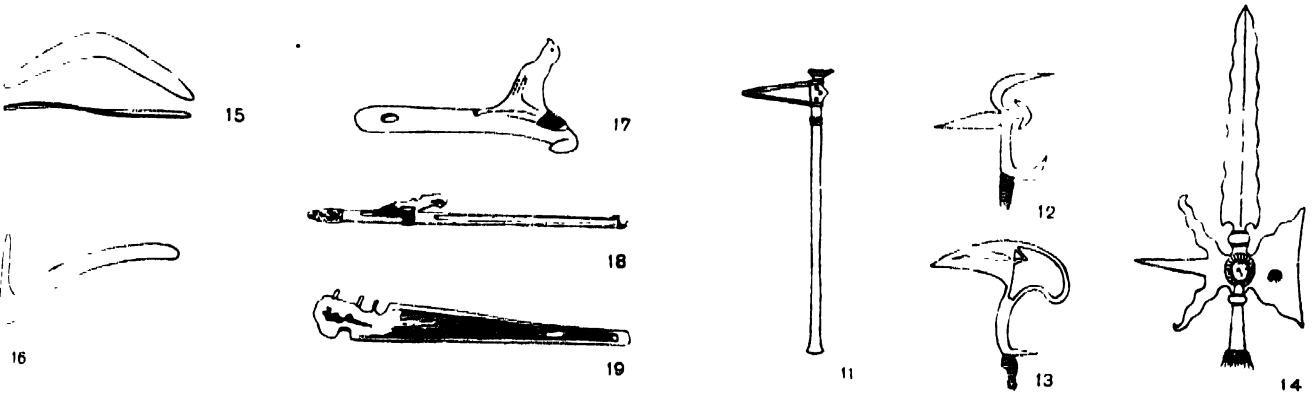
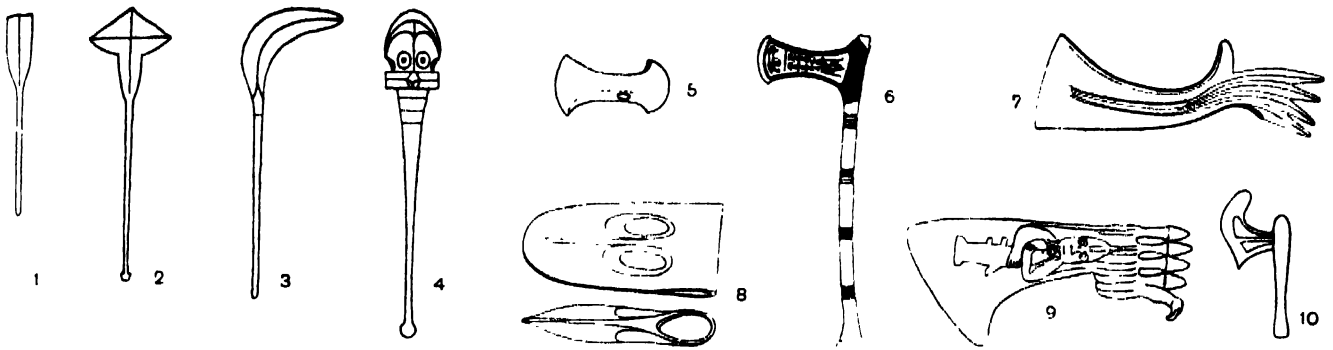
If arms, as tools, have an esthetic value, it is because, in their form and design, function is linked to artistic effect, as in other classes of strictly or chiefly utilitarian objects (see **UTENSILS AND TOOLS; VEHICLES**) and, in the final analysis, even in architecture. In each of these classes, as the structural form is most simply and effectively adapted to a functional end, it is simultaneously translated, by the essential purity of its design, into expressive values. The power of weapons to cut or penetrate is expressively emphasized by form: rhomboid and many-sided as in an ancient neolithic dagger (PL. 436), or elongated like a "carp's tongue" in a sword of the late Bronze Age, or straight as in a powerful medieval blade (PL. 441), or harmoniously curved as in a scimitar, and so on. Adequate protection for the body is generally implicit in the various shapes of shields (PLS. 436, 447, 448, 454). The external shell of helmets always suggests spheroid volumes and various internal recesses and folds (PLS. 438-440, 442-448, 454, 455). Thus, on the one hand, there are effects that ornamentation can emphasize and integrate, or can overcome and contradict. On the other hand, ornamentation — to disregard, for the present, its ideological character and its tendency to reflect contemporary taste, to carry the impress of an entire art-historical period — often has the aspect of a structural feature when it reinforces single details of the weapon or facilitates its use, as is true of the hilts and pommels of swords and daggers, bosses on shields, swellings of bows, and the like.

The appearance given a weapon to express its primary function is necessarily influenced by the culture of which it is a part. If it is to proclaim awesomeness and destructive or defensive efficacy, it cannot do so otherwise than in harmony with the religious, political, and social ideals of the time, on the one hand, and with its traditions and stylistic and esthetic ideals, on the other. Thus Greek helmets or greaves are modeled with the same harmonious plasticity that we find in contemporary sculpture (PL. 438). The crest of a 14th-century helmet seems to have as linear and graceful a form as a Gothic chalice (PL. 443). The point of a baroque spear is paralleled in the picturesque conception and movement of contemporary architectural decoration (PL. 451).

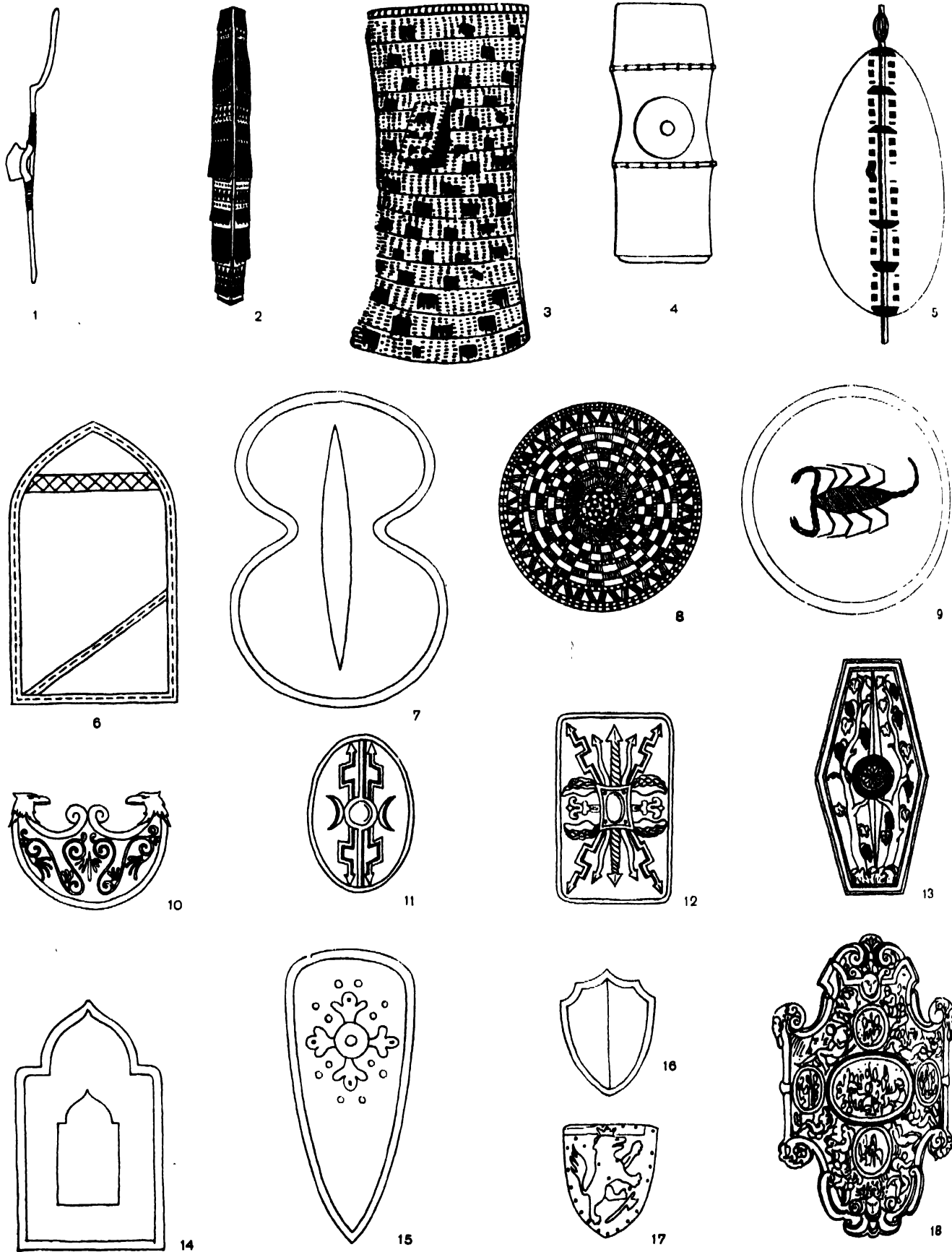
But weapons as tools, whether of offense or defense, do not fulfill their function as isolated, self-contained entities.



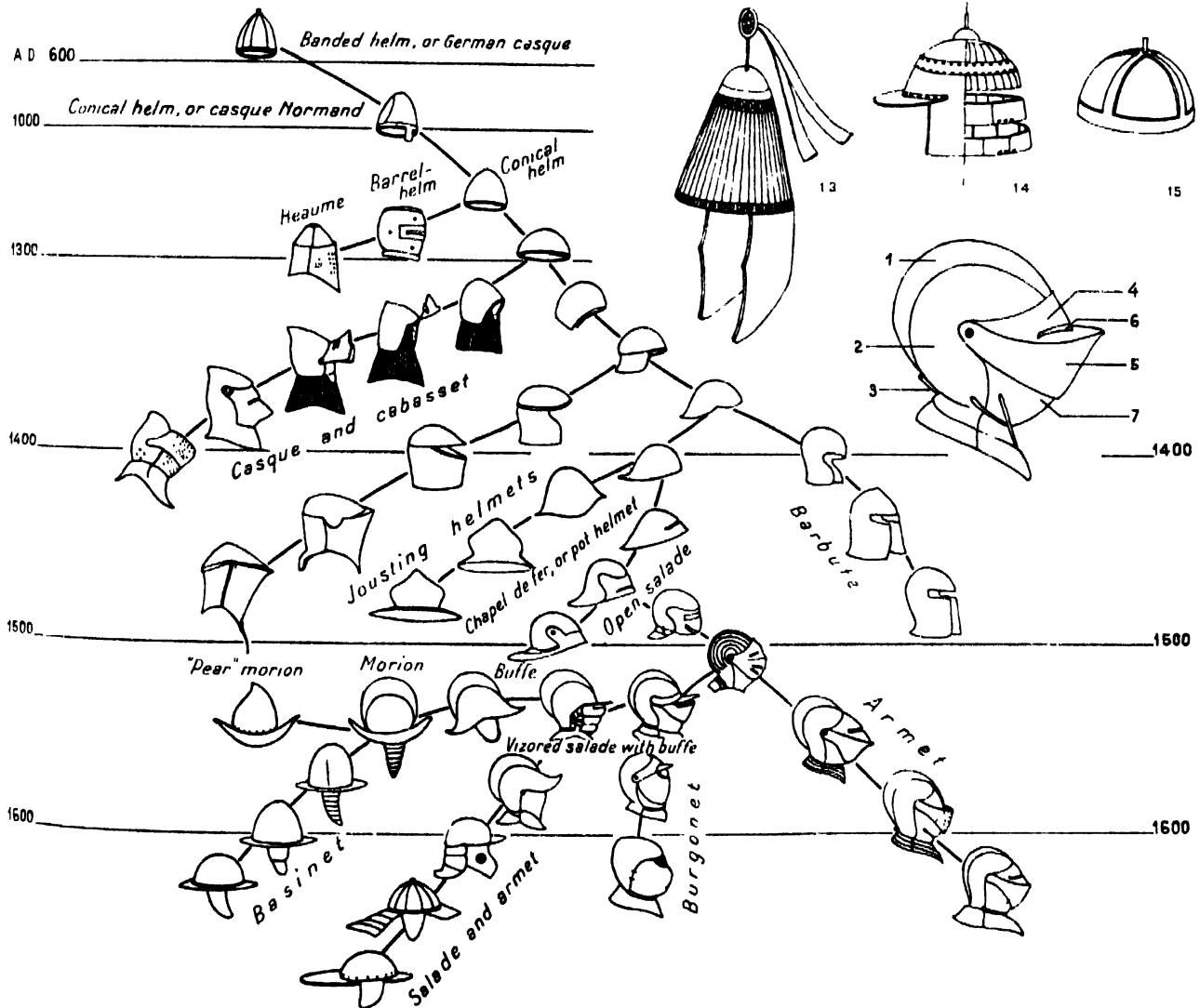
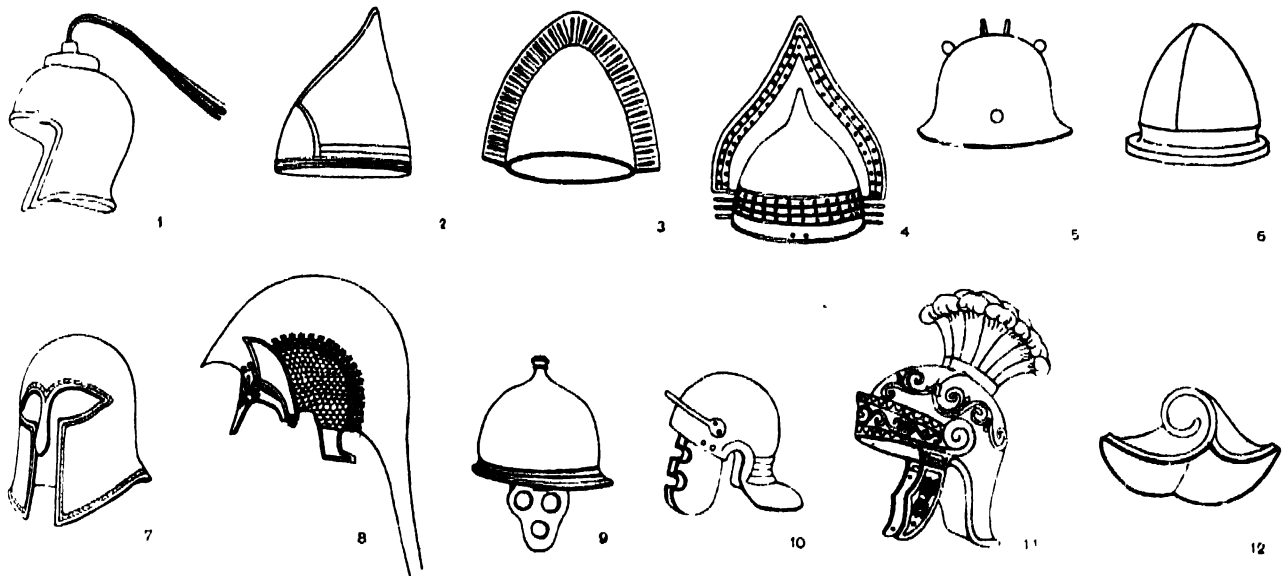
Types of sword, dagger, and saber. *Above:* (1) Mycenaean sword, 14th cent. B.C.; (2) European "antlered" sword, late Bronze, early Iron Age; (3) Central European sword of the Hallstatt civilization, Iron Age; (4) medieval European sword, 9th-10th cent.; (5) one-and-a-half-handed lansquenets; (6) two-handed lansquenets; (7) sword with guard, early 16th cent.; (8) rapier, late 16th cent.; (9) schiavone, 17th cent.; (10) smallsword, 18th cent. *Center:* (1) Sumerian dagger from Ur, ca. 2500 B.C.; (2) iron dagger from Egypt, 18th dynasty, 14th cent. B.C.; (3) Mycenaean dagger, 14th cent. B.C.; (4) European Bronze Age dagger; (5) Roman gladius; (6) 15th-cent. European dagger; (7) Italian ox-tongue dagger, 16th cent.; (8) duelling dagger with spring-opened triple blade, 15th cent.; (9) Malayan kris; (10) Indian katar; (11) Persian dagger. *Below:* (1) Iron Age curved sword of Oriental type from Novilara, Italy; (2) curved sword of Iberian type (μαχαιρα), 6th-3d cent. B.C.; (3) 15th-cent. German saber; (4) German two-handed saber, late 15th cent.; (5) Swiss two-handed saber, 16th cent.; (6) Swiss one-and-a-half-handed saber, early 16th cent.; (7) French saber, late 18th cent.; (8) 20th-cent. Italian saber; (9) Turkish scimitar with Damascus blade; (10) Turkish scimitar; (11) Japanese sword; (12) Indian sword from Nepal, 18th cent.; (13) Chinese two-handed sword, 18th cent.



lub: (1) New Hebrides; (2, 3) Solomon Is.; (4) Marquesas Is. *Axes*: (5) neolithic battle-ax, Eurasia, beginning of 2d millenium B.C.; (6) ancient
 Egypt; (7) Palestine, 13th cent. B.C.; (8) Syria, late Bronze Age; (9) Luristan, end of 2d millenium B.C.; (10) votive ax of the Basonge, Belgian Congo.
Halberds and spears: (11) Bronze Age halberd; (12, 13) Central African throwing spears; (14) halberd of the guard of Louis XIV. *Boomerangs*: (15, 16).
Spear throwers: (17) Magdalenian man's spear thrower of the Upper Paleolithic; (18) woman's spear thrower, New Guinea; (19) Eskimo spear thrower
 used by either sex. *Bows*: (20) Africa; (21) prehistoric Asia Minor; (22) Asia; (23) Japan; (24) goat's-foot lever crossbow; (25) windlass crossbow. *Siege*
weapons: (26) Roman battering ram; (27) Roman catapult; (28) 14th-cent. bombard.



Types of shield. (1) Bantu stick shield, East Africa; (2) Celebes; (3) shoulder shield from Aroe Is., Indonesia; (4) Mindanao, P.I.; (5) Zulu, inside view; (6) ancient Egyptian; (7) Cretan-Mycenaean; (8) round shield with concentric ornament, Iron Age; (9) archaic and classic Greek; (10) pelta; (11-13) Roman; (14) Indian, from a Gandharan relief, 2d-4th cent.; (15) Norman, 11th cent.; (16, 17) small shields of knights, 14th cent.; (18) late Renaissance.



Types of helmet. *Above* (1-15): Ancient and Oriental helmets. (1) Cretan-Mycenaean; (2) Assyrian; (3) Eastern and Adriatic Greek, 8th-6th cent. B.C.; (4) crested helmet of the Iron Age, 8th-7th cent. B.C.; (5) Italic, 8th-6th cent. B.C.; (6) Etruscan; (7) Corinthian; (8) Attic; (9) Italic and Gallic, 4th-3d cent. B.C.; (10) Roman, legionary; (11) Roman, Praetorian; (12) Kushan and Central Asian, from a Gandharan relief, 2d-3d cent.; (13) Central Asian, Kucha, 6th-7th cent.; (14) Japanese, 4th cent.; (15) Central Asian, current from 6th cent., from an 8th-cent. painting in Shorchuk. *Below*: Development of European helmets (redrawn from the *Encyclopaedia Britannica*). *Center, right*: Renaissance helmet, (1) crest; (2) cap; (3) panache; (4, 5) visor; (6) umbril; (7) beaver.

Their power and utility depend on a functional synthesis, so to speak, of various objects of diverse form. Examples are the bow and arrow (or the throwing stick) and accessories such as sheaths for blades, quivers for arrows, and powder horns for early firearms. As the offensive or defensive elements of a weapon and its other elements merge progressively into a kind of functional organism, the design is coordinated with or subordinated to the forms that make for greatest efficiency, and a certain stylistic unification is the consequence. Thus the practical function also acquires a direct and immediate expressive value. As clothing in general (see *COSTUME*) is the formal expression of a condition of peaceful civil life, armor becomes the formal expression of a heroic condition of struggle.

What might be called the heroic "aura" of a weapon not only enhances its suggestion of power but also encourages the symbolic extension of its primary forms beyond the needs and aspirations of the culture that generated it. Examples of this phenomenon are the 16th-century cuirasses seen as military costumes of the late 17th and early 18th centuries, and the sword and saber of modern officialdom.

Such survivals are always justified by ideological motives. While on the one hand these forms still expressively emphasize the power of the weapon, on the other they seem already less immediately bound to primary functions and are instead connected with secondary functions and meanings, mainly social.

Secondary functions and meanings (magico-religious and display). The power of weapons has been felt ever since man first made weapons — and was felt with especial force by primitive man. Experience of their efficacy did not alone create this feeling; magic also played a part, which may explain the origin of the animal figures used as decorations on some of the weapons of the paleolithic hunter (PL. 436), in strict analogy to supposedly magico-propitiatory images of animals incised and painted in caves. Even after direct awareness of a magic power — which was to guide the blow infallibly to its target — was lessened or became lost, the repertory of scenes of hunting and war still remained in use everywhere.

A similar explanation can be given for the phenomenon of zoomorphism and anthropomorphism in arms, which is far more interesting, however, since it has a more profound effect on form than a simple decoration. Although use of animal skins for covering or protection may originally have been a predominantly practical measure (even a tactical means for facilitating approach to the prey), it seems clear that magic intervened to suggest identification of the armed man with the animal whose remains he wore and of which he assumed the power (see *TOTEMISM*; *MASKS*). Little by little, man identified himself with monsters, demons, and divinities, as well as with animals, in order to increase the intrinsic force and suggestive power of his weapons. A terrorizing display has always been typical of war, both in less-evolved societies (where cries before attacking, masks, and war paint were the favorite means of inspiring fear), and in more advanced ones in both the West and the East; there comes to mind the original function of crests with horsetails, horns (PLS. 439, 443), or more complex motifs, or that of the Japanese helmets combined with masks, or *menpo*, in the form of a terrifying face (PL. 455).

Partial or complete images of supernatural beings or naturalistic symbols on arms and armor, besides representing aggressive force, had the additional, and contrasting, function of ensuring protection. From guarantees of defense of this kind, there arose apotropaic symbols such as the scaly agis with the monstrous image of the Gorgon in the military costume of the goddess Athena (and with it the gorgoneia and animal figures on Hellenic shields), the womb represented on the lower edge of shields in New Guinea (Sepik River region), and the totemic ornaments inside the leather cuirasses of the coastal peoples of North America (Nootka and Tlingit) — to name only a few examples.

As attributes and symbols of divinity, or as votive objects (often of precious materials and with special decorations) offered in sanctuaries, arms also assumed a religious, devotional, and ritual character. The Cretan double ax, which was placed

on a pedestal in the center of the cult place, is one example; the throwing sticks of ancient Mexico, habitually represented in the hands of three local deities (the god of the sun, the god of fire, and the god Tezcatlipoca) is another. Richly decorated examples with anthropomorphic and zoomorphic elements are preserved. There are innumerable instances of arms whose use is by now purely ceremonial, such as the *ndomi*, shoulder shields, of the Kikuyu, which are used only in sacred dances.

But the most important and the most common of the secondary functions taken on by arms is that of representing or symbolizing power and social distinction, of serving as insignia of these attributes (see *EMBLEMS*); it is a function that may naturally arise as a concomitant of the religious function. Examples are found among primitive peoples, in the earliest civilizations (royal fighting maces of the ancient Orient and protodynastic Egypt), throughout antiquity, even in the Middle Ages and in modern times. It is only necessary to recall the symbolic value of the so-called "papal sword" offered by the popes to reigning heads of state as a symbol of the struggle for the faith, or of the saber and epaulets (last survival of shoulder armor), which are still worn as an indication of rank.

The forms and decorations of some weapons are linked to the heraldic device, which in its way is an insigne, not of political power, but of a moral attribute — associated with an individual, a family, a body, a group, or a nation — that places the warrior on a historic pedestal and charges him with a certain responsibility toward society. In this manner the close connection between arms and flags may be explained (see *EMBLEMS*). Adornments celebrating traits of character or achievements doubtless had their origin in the most ancient and simple societies, and they may still be seen among primitive peoples. In Africa, among the Masai, each warrior had on his shield a coat of arms with a particular meaning, which indicated his military rank and the acts of bravery he had performed. Similar shields are found among the Jaluo and the Kavirondo. In more advanced societies, however, the phenomenon is more definite and constant. It can be observed in classical antiquity. The Roman legions had their own symbols; the scorpion, for example, characterized the arms of the Praetorian Guard. The development reached its height in the feudal Middle Ages.

The shield and the crest are the places on armor particularly reserved for heraldic devices. Beginning with the 12th century the shield became the primary bearer of heraldic insignia; in the 14th century the small triangular shield then in use was more a coat of arms than a true weapon of defense; in the 15th century colors and heraldic devices adorned the great pavise, a very long shield that, stuck in the ground, constituted a safe shelter for two soldiers on foot. The shield as a weapon, however, was not modified in its functional form by heraldry, which limited itself to enriching the aspect of the object by superimposing a painted decoration. The case of the crest, which reappeared in medieval armor between the end of the 12th and the beginning of the 13th century, is different. It evolved on top of some varieties of the pot helmet and was modeled from a light material, such as painted leather. Initially intended as a blade deflector, it came to characterize heraldically, with complex and unusual motifs, with zoomorphic and symbolic motifs, family traditions and individual personalities of knights. Among the oldest examples preserved, all dating from the 14th century, is the crest of the Black Prince in Canterbury (1376).

Besides a strictly heraldic and individual system of emblems, there exists a series of decorative devices linked to more general concepts of class, caste, and association. These may incorporate various symbols representing the ideal for which the warrior is fighting (the decorations on the weapons of the Crusaders are an example), or they may illustrate allegories, moral principles, and even stories that by analogy illuminate the deportment, the duties, and the sentiments of the warrior. At times use of these devices became a highly refined art. Typical examples are the figurations on the *tsuba*, or guard, on the swords of the samurai. All sorts of designs are known, from narrative to symbolic to completely abstract. Some are more or less closely linked to the ideals and duties of the samurai, but many more to a wide variety of subjects, including the most

trivial and humorous. A subject sometimes treated in design, the moral figure of the combatant, is illustrated in the motif of the carp that struggles against the current and submits impassively to mutilation of its flesh. Other designs narrate legendary exploits of military heroism. The glowworm motif, for example, commemorates the annual battle of the glowworms, which popular fantasy saw as phantoms of the two clans of the Taira and the Minamoto, locked in mortal conflict on the River Uji, near Kyoto, in the 12th century. Still other designs reflect the hopes and human fears of the samurai. The mandarin duck, symbol of conjugal happiness, is an example; it represents the companion whom the warrior is sometimes forced to abandon in his undefended home while he follows his hard duty, perhaps never to return.

The origin of the general phenomenon of anthropomorphism in arms lies in the psychological, moral, symbolic, and even mechanical relationship between the weapon and its bearer.

Anthropomorphism is capable of assuming infinite gradations, from the heroic to the terrifying, from grotesque caricature to idealization. It may also take the form of an "anatomic adherence," which in the cuirasses and greaves of the Greeks doubtless reflects the athletic and heroic ideal of the male nude (PL. 438).

Finally, arms are used in sports and spectacles. The ceremonial roots of this use of arms account for certain motifs connected with the dance (armed dances occur among some primitive and ancient societies; see CHROMOGRAPHY) and with athletic contests of strength. Antiquity boasted the special, at times sumptuous, armor of the gladiators (PL. 440). The Middle Ages and the Renaissance saw the flowering of jousts and tournaments, in which the intention of striking without killing brought about special modifications of forms, with emphasis on defense (PL. 445).

Tournament armor has characteristics of its own. Since it was part of a spectacle and did not have to be worn for a long time, it could be heavier than the armor used in war. At any rate, it was highly decorative, as its function demanded, and gave prominence to the heraldic elements exalting the personality of the warrior.

The decline of the kind of war associated with individual tactics and the heroic ideal of the single combatant, which began in the 16th century, obviously brought about a change in the moral significance and the esthetic quality of arms. The ever-increasing use of firearms, which rendered armor superfluous and relegated other offensive arms to the background, ended by eliminating any need for traditional types. Thus the craft of the armorer disappeared along with the products that had characterized it for millennia, and the era of industrial production began. At least in the West, firearms had but a short life as artistic objects. When cannons were first used, each piece had a different form and precious decoration (PL. 453), as well as a picturesque individual name, but they were soon standardized into a few constant types. Firearms for individual use were slower to become uniform (PL. 452).

Material, form, and decoration. Expressive values (power, speed, penetrative ability, etc., may be among the qualities expressed) can be found in the simplest, most rigorously utilitarian weapons, for, as has already been pointed out, artistic expression is independent of particular embellishment or marks of ostentation. It is certain, however, that a transfiguration and complication of the meaning of the object-weapon in relation to its secondary roles (as a thing of magical or religious potency, as an insigne, or as an element of display) cannot but result in an enrichment of the expressive content and, in the final analysis, in the technical elaboration of the work and its reflection of the esthetic ideals of the time.

An important aspect of progression from the sphere of practical functions to that of artistic values is the use of precious materials to ennoble the instrument, if not to transmute it outright. The practice first affected secondary functional parts (which paradoxically assumed a decisive artistic preeminence), such as the hilts of gold, ivory, or bone, damascened or inlaid blades, and jeweled adornment on daggers and swords, and

was already prevalent in the protohistory of the ancient world and later in the great historic civilizations of Europe and Asia (PL. 437), as well as in the cultures of pre-Columbian America (consider, for example, the Aztec daggers inlaid with turquoise). But the precious material sometimes ended by taking over the whole weapon, as it does in the solid-gold daggers and the ivory bows of the ancient Orient and in other objects produced in subsequent periods, especially in the field of parade armor. Nor was the preciousness of the material always inconsistent with the primary function of efficiency in war. In fact, material and function occasionally complemented one another, and the use of a precious material sometimes prefigured technical applications of incalculable consequence, as is the case of the daggers with iron blades forged by the Hittites of the New Empire, which Hattusilis sent as gifts to other Oriental sovereigns.

It seems that the esthetic sense does not always create rigorously functional forms or forms that meet the particular requirements of ceremonial apparatus. At times a spontaneous feeling for the geometric intervenes to determine them, as in the case of the round shield, the so-called "Asiatic" shield, diffused throughout the ancient world until the appearance of the rotella of the Renaissance (PL. 448). The latter, although inadequate as a covering for the human body, in contrast with the predominance of vertically elongated shields among primitive peoples (PL. 436; FIG. 735), was developed as an adjunct to rapier play to allow freedom for the sword arm. There are also examples of an exuberant abandon that enriches and complicates lines beyond any practical need, as in the case of the flat, pleasingly varied, spatula-shaped clubs of the Solomon Islands or the bizarre many-pointed throwing spears of central Africa (FIG. 733). Or rather, as has been observed, these objects reflect in their design the dominant tendencies of the style of various epochs and cultures.

More sensitive to the transition from a technical to a display function is decoration, which at times may be an extension or accentuation of the elementary form of the weapon, but which is usually superimposed on it as an autonomous adjunct. Decoration is more or less extensive according to the purpose and richness of the object; its motifs tend to reflect directly the ultimate evocative, apotropaic, symbolic, sacred, emblematic, and display meanings; stylistically it adheres more closely to the taste of the time.

Normally, geometric and abstract decoration, consisting of lines, stripes, braids, rhomboids, meanders, spirals, and innumerable other figures (see also ORNAMENTATION) traced in drawing or executed plastically, predominates where these forms are also widely diffused in ceramic ornamentation and in all other artistic products. This tendency is observed in the protohistoric cultures (Neolithic, Bronze, and Iron Ages) of the ancient world, in the non-European primitive cultures, in cultures of the barbaric period, and in similar cultures. It must be noted that this sort of decoration is the one most closely linked to the elementary form of the weapon, whose design it accompanies in a pleasing manner. For example, there are lines and longitudinal ribs on blades, concentric circles on round shields (FIG. 735), bosslike enlargements, spiral motifs on hilts, and others. Occasionally the same animal and vegetable themes, as they become geometricized and schematized, tend to become part of the tectonic order of the object and to be adopted, along with the typological mold of the weapon, even in periods and cultural surroundings different from those in which the ornament originated.

In contrast, the flowering of a naturalistic and "scenic" art may manifest itself in the decoration of arms as an element extraneous to and, in a sense, inconsistent with the form of the object; what occurs is a real superposition, an adaptation of the subjects of great contemporary art. The influence of such art is evident in paleolithic throwing sticks with figures of animals incised or carved in the style of rock drawings (PL. 436); in the cast and relief ornaments of Greco-Roman helmets, shields, cuirasses, and greaves, which are examples of metalwork closely connected with classic relief (PLS. 438-440); in 16th-century armor extensively incised with the typical "grotesque" motifs that constitute one of the decorative themes

used by the fresco painters of the period (PL. 447); on the tsuba of Japanese swords, with their stylized representations of clouds so much favored by the great painters, and so on. In those civilizations where interest in and sense of the historic is greatest, the weapon tends to become the background for representation of mythological, political, and military exploits. Such decoration in no way differs, in orientation of taste, from that of contemporary medals, plaquettes, reliefs, or nielli, and it therefore belongs to a general history of artistic civilizations rather than to a particular study of artistic arms.

Finally, material, form, and decoration may contribute, in the work both of outstanding artisans and of great artists, to the creation of complete works of art, as was the case, especially in the Renaissance, in the work of the famous Lombard, Tirolese, and German armorers (PLS. 444-449).

ARMOR AS "ARCHITECTURE." The formal problems associated with a weapon made more or less of a piece are not so complex as those presented by a suit of armor, which may be considered a "construction" made up of single parts that must be esthetically coordinated. The same may be said of those mechanical arms in which the concurrence of several necessary objects (an early instance is the elementary bow-arrow-quiver synthesis) develops into the elaborate structures of the great group-manned weapons (war machines, artillery). In fact, the warrior covered by his armor is also in a certain sense a machine. The technical synthesis of the properties of defensive and offensive weapons makes the individual who carries them a dangerous tactical instrument. Formal harmony in both suits of armor and mechanical arms combining several objects have characteristics that, from a certain point of view, correspond to those of architecture. This is true over and above the more strictly architectonic characteristics of some war machines and their relationships with vehicles (q.v.), which in turn are linked with architecture in problems of structure and space.

The armed warrior. Historically and functionally there are periods and cultures in which offensive and defensive weapons, even though in constant, traditional, and complementary use (e.g., spears and shields), do not contribute to the creation of an integrated suit of armor. Elsewhere, through extension of the connective covering for protection of the different parts of the body and through emphasis of certain forms and lines to suggest a warlike or heroic character, armor tends to constitute a harmonious complex, not only in function but in form. The first kind of armor is typical of primitive societies (where the terrifying effects or mystical devices are repeated in the painting of the body, the ornaments, etc.). The second kind evolved, by degrees, throughout the ancient civilizations with the addition of the helmet, cuirass, and greaves in the typical costumes of the Assyrian foot soldier, the Greek hoplite, the Roman legionary; next came mail armor, which covered knight and horse with scale cuirasses without break in continuity; finally, through Occidental and Oriental experience in armor making during the Middle Ages, the culminating point was reached, between the 14th and 16th centuries in Western Europe, in a complex suit of armor made of steel plates (PLS. 444-447). Asia offers a similar instance of such evolution in the development of the armor of Japanese warriors (PL. 455). By an inverse process, in the West the development of new techniques of warfare, resulting in ever-widening use of firearms, led to the decline and eventual disappearance of personal defensive armor, with the exception of the helmet, which is still in use. Thus in the course of the 17th and 18th centuries the warrior little by little discarded the iron and steel which had covered him, and that architectonic unity of armor was destroyed which, in the preceding centuries and in antiquity, had succeeded in creating a true "statuary" type of the warrior.

Artistically the parts of a suit of armor tend to be composed into a harmonious and stylistically unified design, influenced by the ideals of the period of which it is an expression.

It is true that many of the elements of Greek armor were already present in Mycenaean or Near Eastern (Assyrian and Anatolian) armor. But it is also true that Greek armor developed

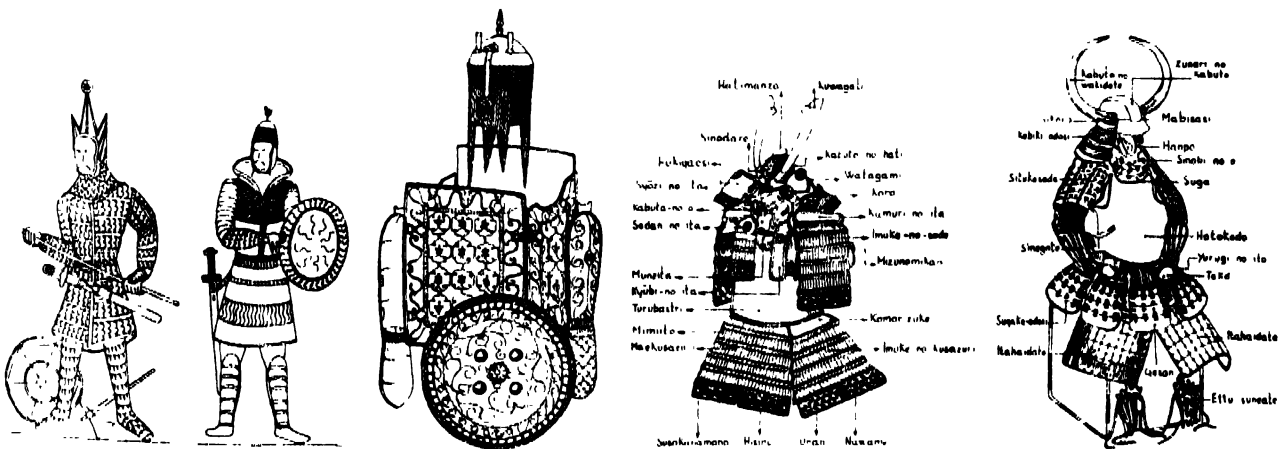
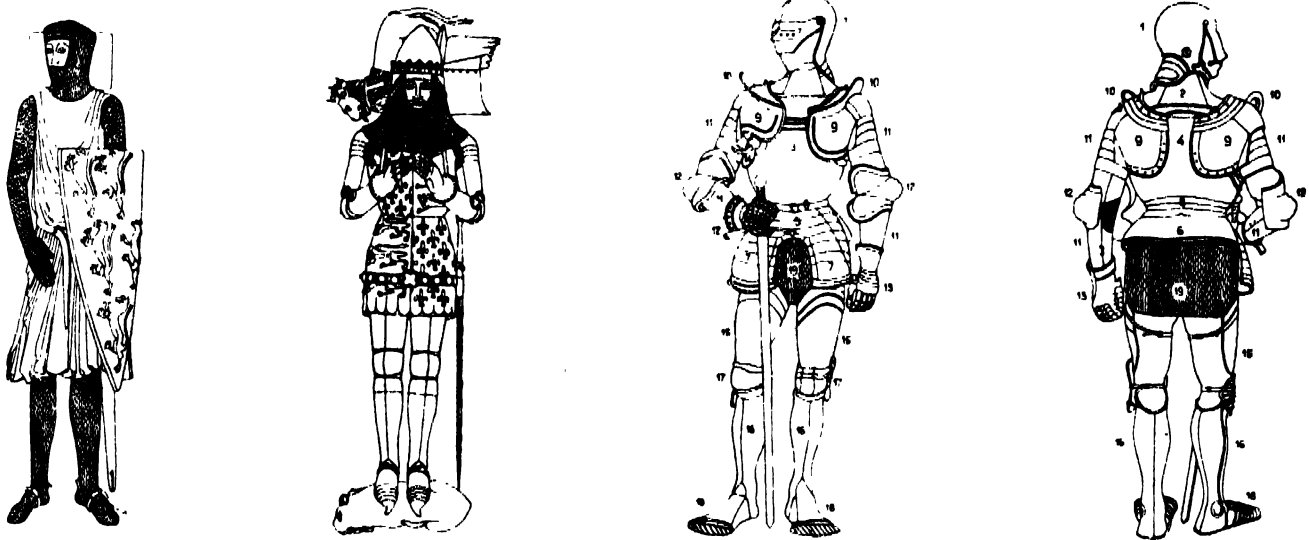
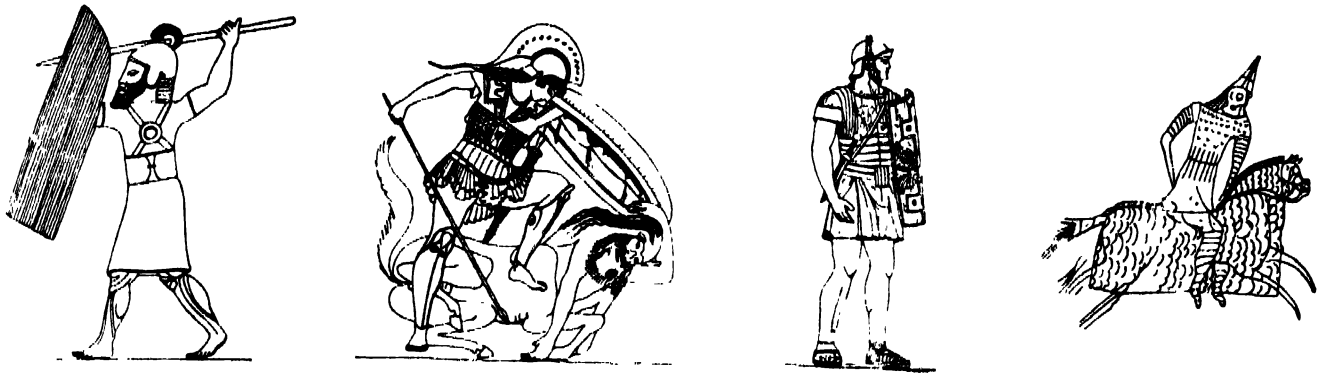
characteristic original forms, exemplified by the great round shield decorated with figures, the helmet with its rich crest (in the Attic and Corinthian types), the cuirass and greaves following the contours of the body (PL. 438). Under his helmet and behind his shield, the combatant is, as it were, nude in his metal skin, emulating the plastic ideal of classic statuary. But the proudly accentuated crest of the helmet and the heraldic and apotropaic symbols on the shield introduce a fantastic note of color, a nervous elegance of forms, which transform the ferocity of martial array into a sort of epic nobility. The standard features of Greek armor became individualized and sublimated, so to speak, in the armor of the strategoi and of the Hellenistic princes (later in that of the Roman generals and emperors), by the art of the goldsmith, involving superimposition of representational, ornamental, symbolic, and mythological elements on the metallic surfaces of the shields, helmets, and cuirasses.

In contrast, the armor of the Roman legionary, although it is composed of essentially the same elements, lacks individuality, for a leveling to standard types took place with the progressive organization of the army into specialized corps. The helmets have very reduced crests; the forms and ornamental motifs of the shields are standardized and represent the different specialties of the legionaries. A technical and practical conception of war prevailed, and the insignia testify to a sense of organized collectivity. The Roman legionary offers the first image, not of the hero, but rather of the soldier.

This image slowly dissolved with the breakup of the Empire. In the weapons of the Dark Ages we see a survival of Roman and Byzantine forms, along with innovations of barbaric origin, which mark a return to primitive individualism.

The first reliable documents concerning armor worn in the Middle Ages go back to the 11th century. The Norman knights of the period of the invasion of England are clearly singled out in the famous Bayeux embroidery. Their martial costume is a far cry from Greek elegance or Roman rationality. They wear a heavy and wide upper garment of padded leather or canvas, on which are sewn scales or rings of metal in parallel and superimposed lines. The tunic is split at the ends in the form of breeches, under which are worn mail chausses. Under the tunic is a neckpiece of mail, which protects the head and on which is worn the conical Norman helmet, of iron, with a nose-piece. The shield is large, almond-shaped, and made of wood bound in iron and decorated with symbols and bosses. The spear, which is at least 3 yd. long, has a point in the shape of a leaf and serves as staff for a pennant. On the knight's left side hangs the great sword, symbol of knightly dignity. This may well have been the war costume diffused throughout Western Europe, the armor of chivalry and the Crusades. It is an essentially functional armor, expressive of difficult times and reliance on individual strength.

After the first Crusade, toward the middle of the 12th century, the armored tunic was replaced by the coat of mail, certainly of Oriental derivation. This is the so-called "hauberk," which covers the body to the knee, and under which a gambeson is worn. It is split from waist to hem for convenience on horseback. The hood and the gauntlet, formerly of leather, are made of mail. The helmet is either conical, pot-shaped, or of the barrel type. The shield becomes even larger and is enriched with heraldic decorations. The warrior is still heavily padded inside his armor. But in the 13th century the aspect of the combatant changes rapidly. The technique of construction of mail is perfected, and mail is made more close-knit. The hauberk, first of all in one piece, is divided into two parts (one to protect the chest, along with the hood, the other to protect the legs). The iron net is of various colors, and above it are worn surcoats, or cloth tunics of bright colors. The old conic helmet gradually disappears, and barrel helms appear. Later helmets are set directly on the shoulders and coif, permitting the head to move more freely. These helmets carry heraldic crests. In short, the image of the knight is completely new, particolored, and picturesque. The waning of the Middle Ages is proclaimed; Gothic art has demonstrated the poetry of line and color in the costumes of the warriors, which flaunt iron-



Various types of personal armor. *Above, left to right:* Assyrian warrior, from a relief of the 7th cent. B.C., London, British Museum. Greek warrior, from the interior of a kylix by the Foundry Painter, ca. 490 B.C., Munich, Antikensammlung. Roman legionary, from a relief on Trajan's Column, Rome. Armored knight, from a sgraffito of the Parthian period in Dura Europos. *Center, left to right:* European 13th-cent. knight, from the tomb of William Longsword (d. 1226) in Salisbury Cathedral. European knight's armor of the 14th cent., from the tomb of Edward the Black Prince (d. 1376) in Canterbury Cathedral. European knight's armor of the early 16th cent.: (1) skull piece; (2) gorget; (3, 4) breastplate and backplate, the cuirass; (5) taces; (6) fald; (7) tuille or tasset; (8) belt; (9) pauldron, or epaulière; (10) neck guard; (11) brassard; (12) elbow cap, or cubitière; (13) gauntlet; (14) lance rest; (15) cuisse; (16) greave, or jamb; (17) knee cap, or genouillère; (18) solleret; (19) chain mail. *Below, left to right:* Sassanian armored knight, 6th-7th cent. Noble Central Asian warrior, Kucha, 6th-7th cent. Islamic armor. Japanese armor, with individual parts labeled.

tipped jousting spears carrying streamers, flowing skirts, crested and plumed helmets, shields reduced in size and enlivened with fantastic symbols.

Between the 13th and the 14th century all the articulated parts of armor in plates were developed — the knee cops, greaves, cuisses, and elbow cops. The coif was also reinforced by a metal cap, which, by the addition of metal plates, became the basis for the later basinet and barbute. At the same time the heavy pot helmet was replaced by lighter helmets with movable vizors. The different parts were fused together little by little, until a single sheet covered the chest of the knight. This sheet, in turn, was connected with another to protect the back. White (burnished) plate armor, thus perfected, was reproduced in forms that mirrored the taste of Gothic art ever more closely. Over the white armor cloth surcoats were once again beginning to be worn; the 13th-century skirt reappeared, almost hiding the plastic unity that had just been achieved.

But the 15th-century armorers quickly understood the formal value of steel. The development of the visual arts, the impassioned search for plasticism and proportion, aided them. At the end of the century individual armor acquired a compact unity (PL. 444). Armor was conceived as a true piece of sculpture, as the plastic image of the warrior. We find ourselves before a simplified, heroic anthropomorphism. For artists such as Paolo Uccello, the plastic-geometric qualities of a knight's armor embodied the pattern of the new visual expression of the world. In a parallel manner, especially in Germany, the late Gothic ~~stylistic~~ ^{stylistic} ideals were restated and reflected in the working of metal surfaces with linear vibrations, with sharp points that tormented the steel and gave a more emphatic and violent character to the profiles (PL. 444).

The 16th century marks the complete decline of the plastic compactness of armor. Relief, niello, and damascening invade the surfaces; an extraordinary, at times unbridled technical virtuosity was applied to the imitation of materials and clothing (PL. 446). War costumes tended to become courtly costumes, under the influence of a refined and ceremonial manneristic idiom, which transformed the powerful "sculptors of the empty shape," the 15th-century armorers, into decorators, goldsmiths, and metal engravers (PL. 447). And this process was encouraged and intensified by a taste for the baroque at a time when cuirasses had practically gone out of use and filled a purely symbolic or display function. In the course of the 17th century princes and sovereigns still had them made but wore them almost exclusively in formal court portraits.

Whereas in the West, from the classic period to the Renaissance, armor had repeatedly been modeled on the form of man himself, plastically exalting his physical qualities, in the East it always remained more fragmentary and therefore emphasized picturesque and decorative values rather than plastic ones. This contrast in approach points to the profound gulf between the plastic-humanistic trend in Western art and the abstract-decorative tendencies of the Islamic East.

The armor of the whole Islamic world, from Persia to India and Turkey, has rather constant characteristics. It is a plate armor made up of four elements: the conical helmet topped by a pyramidal point or, sometimes, by a plume holder or a small crest, furnished with a movable nasal and completed by a neck guard (camail in European armor) of chain mail; the cuirass of four or five rectangular sheets of steel, held together by hinges or by straps; iron gauntlets that reach above the elbow; and finally the small round shield, generally also of steel (PL. 454). The horse's armor is of leather or sheets of iron, with flexible plates in front. For its effect, Islamic armor relies not so much on form as on sumptuous decoration, fragile inlaid arabesques, the use of rare and precious materials; the result is a splendor of surfaces, an abstract scintillation, a symbolic or nonmaterial beauty. Helmets, shields, cuirasses, and *dastanas*, or arm guards, thus became rare and precious objects, which harmonized with the picturesque variegation of robes and silks.

Personal armor in ancient Asia is too little known to make possible a comparison with the European types of the later Middle Ages and the Renaissance. Only in Japan are records

and monuments preserved, and these present a complex and rich expression of individual taste in personal armor. The samurai class were warriors, not merely killers. They lived by a strict code of ethics and followed a rigid procedure unmatched anywhere else in the world. Their code duello was even more rigid than that of 18th-century France, and the body armor of the samurai and his weapons were evolved with this code in mind.

Japanese armor was highly decorated. The basis was a padded suit of heavy cloth or leather, to which were sewn metal scales or rings. By the 10th century, however, when we first encounter complete suits of Japanese armor, it had assumed a character of its own, which it was to retain as long as armor was worn. Grotesque as it first appears, Japanese armor is among the world's finest; a well-made suit would last many years and provide protection for generations of samurai. The armor was light and flexible, and, save for the face masks (*menpo*) and the greaves (*sune-ate*), no part was fitted closely to the body, so that a suit could be worn by nearly any average man. The whole ensemble consisted in the main of small plates sewn together with silken cords. The color and closeness of the ties were indications of rank and sometimes told the aim of the warrior. The closer the fittings, the higher the rank; the colors of fire, gold and red, were reserved for royalty, while white, the color of death, meant that the warrior was pursuing a forlorn hope. The helmet (*kabuto*) consisted of a series of small metal plates riveted together, with raised edges at the joints. It usually had a small peak in front and a stiffened, flaring neck guard. If no mask was to be worn, or only a half mask, the helmet had a projecting umbril.

The Japanese saber (or *katana*), for its purpose, was the most nearly perfect combat weapon ever devised by man. While the European sword has had a complex development, the Japanese fighting sword has undergone little change in form as long as it has been known. Except for the scabbard, grip, and tsuba, it is seldom decorated. The tsuba is the only working part of the weapon that is decorated, or, to put it another way, it is the only piece of sword furniture which is really necessary, the remainder being for convenience of carrying or for display. The tsuba is essentially a plate of metal pierced to receive the tang of the blade and provided with a ferrule that forms a watertight seal with the scabbard. It is usually oval, but it can be round, square, rectangular, or scalloped or assume the form of a figure eight, like the guard of a French fleuret. In rare instances tsubas are anthropomorphic in form, taking the shape of insects, frogs, birds, or even human beings. The scabbard is frequently treated in the same manner as the grip, that is, wrapped in sharkskin and lacquered; it sometimes carries the owner's crest.

No type of armor has ever expressed so graphically as Japanese armor the metamorphosis demanded of those who must meet the ferocious and fantastic terms imposed by war. Its effect is achieved by a variety of means: through the helmets with their masks modeled into contorted and horned demoniacal forms; the armor bristling and polychromed like the skin of a dragon; the sword expressive of a fierce exaltation; the dramatic symbolism of the decorative motifs; and finally, the almost ceremonial character of the whole armor. The man disappears completely inside the metallic skin of the warrior (PL. 455). The very anthropomorphism of some of the masks is rather more inhuman than any functional or abstract form.

The terrifying symbolism of Japanese armor is connected, at the same time, with the expressionism, the intellectual concentration, the search for the ideogram, which characterize the art of the Far East; it corresponds to that graphic poetry, or philosophy, which is expressed by brief, intense, and pregnant images. Here, where the motif is the horrible and ferocious one of war, it is logical that it should be expressed in symbolically fierce motifs. It is significant that Japanese armorers worked in close contact with artists (often the armorers were artists), especially with painters. And if, on the whole, the armor of the samurai always has a formal unity of an almost frozen tone, in the decorative details, obscure to the Western eye but clear to the analytic sensibility of the Orient, there are hidden

bits of cosmic poetry, completely analogous to, in fact derived from, that in the fine arts. In this connection the motifs adorning the tsuba of the terrifying sword come to mind. When the centuries of war were followed by peace, the arms of the samurai gained even more in richness and splendor, but like all personal armor they had to give way to new techniques of war.

War machines. The war machine was developed through the enlargement of the simplest mechanical projectile arms (from bows and slings to ballistae and catapults) or striking pieces (from the club to the battering ram) and their adaptation to the requirements of siege war, which was known in the ancient Orient (Assyria) but spread to the West, together with the complex rules of poliorcetica, the art of besieging cities, only at the beginning of the Hellenistic age. War machines such as the battering ram and siege tower belong to the realm of what might be called "mobile architecture."

The form and ornamentation of light fighting chariots are more properly considered in a discussion of vehicles (q.v.). Collective mechanical siege weapons, from the mobile tactical structures of antiquity to modern siege artillery and armored cars, manifest a constant relation to vehicles. From the point of view of design, the modern machines show the same sense of volume that characterizes wheeled aggressive weapons such as the heavy battering rams of the Assyrians.

Artillery has a character of its own. It is in a sense the heir of the ancient siege machine. With the union of the barrel and the breech, the cannon acquired complexities of construction and various technical elements more common to machines than to personal weapons. But its typical element, and the one artistically characterized, is the barrel, in which representational and symbolic elements, properly belonging to personal weapons or complexes of these, tend to be added to the decoratively accented simple functional form (PL. 453). To possess splendid artillery, cast and worked by famous artists, became in the 16th and 17th centuries in the West as well as in the East (and in the East even in the following centuries) the ambition of every ruler. In effect these arms had a prestige value in the political climate of the time; but when their use became tactically dominant, they rapidly lost their individuality and their decoration to become once again, like the ancient machines, simple instruments of war.

Any collective implement of war tended to be highly ornamented when it was linked to the personal prestige of a reigning line or to the figure of a leader, or simply when it was used by an esthetically educated people. The same is true of warships and, more generally, of true military architecture, discussion of which, however, would go beyond the limits of this article (see VEHICLES; STRUCTURAL TYPES AND METHODS).

CENTERS OF PRODUCTION AND ARMORERS. The profession of the armorer developed quite early — perhaps even in the Neolithic period — as a specialized independent craft. In many societies on the primitive level, even today, the figure of the skilled armorer exists distinct from the associated crafts of the hunter and primitive farmer.

In all archaeological civilizations the existence of technically specialized armorers is attested directly by the high artistic level of samples of their work that have been found (a cuirass of the Flavian period, found at Lauersfort in the Rhineland, bears the signature of the armorer) and indirectly by the visual arts and literature. The history of the Japanese armorers is well documented from the 13th century on. As is the case elsewhere, the origins of the armorer in Japan are shrouded in mythology, legend, and folklore. The earliest smith whose name is known is reputed to be one Amakuni of Yamato, who flourished in the 7th century. Next came O-haru Sanemore of the mid-9th century, whose blades were supposed to have been very fine. The greatest master of the 10th century was Munechika, who was born about 938. In the 11th century the most celebrated armorer was Yoshiiye of Kyoto, who had a reputation for fine armor as well as blades. The earliest blade reputed to have been signed by its maker was forged in the year 806 for the son of the emperor Heisei Jenne by the master Shin-

soku of Usanoma. In the 13th century Yoshi-mitsu, Kuni-yuki, and Kuni-toshi all signed famous blades. In the 14th century came Masa-mune, probably the greatest of all. In the 15th and 16th centuries, the best-known smiths were Kane-sada, his nephew Kane-sane, Fuji-wara, and Uji-foussa. Umetada Miojiu was called to Kyoto by the Ashikaga shogun Toshiharu in 1546. The city of Osafune became famous for its blades, and Hara-mitsu, Suke-sada, Kiyo-nutsu, and Yasu-tsugu were among the men who worked there. Blades dated prior to A.D. 1600 are called "old" (*koto*) and are highly prized, whereas those forged after this date are "new" (*shintu*) and are thought to be inferior.

In Japan the armorer was originally distinct from the swordsmith, and the maker of sword furniture represented a third craft. After the Ashikaga period, however, the distinctions became blurred; even as early as the 11th century Yoshiiye was noted for armor as well as blades. Probably the most famous family (really a guild) of armorers was the school of Miochin, which was founded by Miochin Munesuke in the 12th century. His reputation lived on in his successors until 1756. Nobuiye, Yoshimichi, and Takayoshi were the most celebrated masters in the family after the founder, Munesuke, and are called *Nochi-no San-saku* ("three later artists of renown"). The tsubas of Nobuiye are among the most rare and celebrated art treasures of Japan.

The last phase of Japanese armor is the decoration of sword furniture, which usually centers around the tsuba. In many cases tsubas were made by renowned smiths or armorers, such as Yoshiiye and Nobuiye, but such instances were rather rare prior to the Ashikaga period.

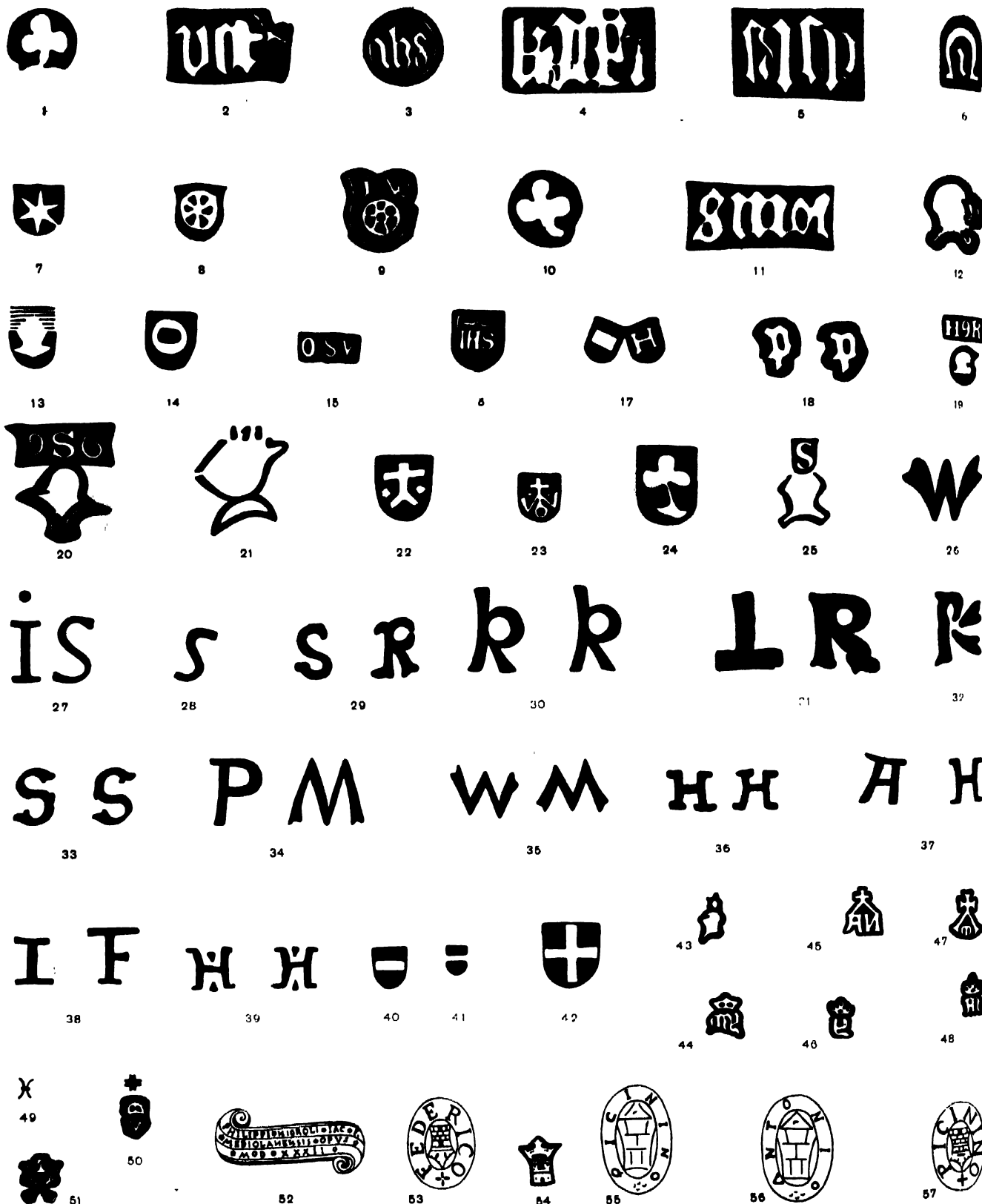
In Mohammedanized Persia, traditions of fine and varied craftsmanship go back as far as the Sassanian period (A.D. 222–650). A tremendous development in all the arts took place first under the Abbasside caliphs (750–949) and then under the Orientalizing influences brought into Persia in the wake of the incursions of the Seljuk Turks and their dynasty (1037–1179). By the beginning of the 11th century the characteristically decorative and graceful Persian-Islamic style, with its abstractions of naturalistic forms, was at its height.

Although all metalwork responded to the additional grace and charm of the Seljuk period, it was not until the era of the Mongols (1220–87) that Persian arms and armor first reached their full flower. In spite of the death and devastation attendant on the invasion of the Mongols, these brought about another era of cultural development comparable to that under the Sassanian monarchs.

Mohammedan metalwork, including arms and armor, reached its full development in the 13th and 14th centuries. The actual metal employed presented a fibrous or closely layered texture that became known as Damascus steel. Yet so-called "Damascus" steel was not necessarily made in Damascus, which acted as a distribution point; it was, rather, any Oriental laminated or "watered" steel, and the term may be taken to apply to all the Arabic countries as well as to Persia, Turkey, India, and Malaya. Weapons and armor made with this wavy-textured metal are often "damascened"; a precious metal such as gold is often worked onto the steel with the aid of sharp grooves that have been scratched into the surface of the steel. The gold is clamped into place over these grooves.

It is in these areas of decorative beauty (including the application of precious metals to the steel by firing or acid, and indeed the inlaying of precious stones) that the Islamic armor of these centuries is so important. The relatively few shapes produced in this school remained standard for a long time. They are indeed recognizable to us from the miniature paintings produced in this same eclectic culture whose origins are so widespread and whose intellectual impact is so far-reaching.

In Europe, in the 10th and 11th centuries, Friesland, Verdun, and Pavia became famous as centers of production; from the beginning of the 14th century the best-known centers were in Poitou, Dauphiné, Andalusia, La Mancha, and the cities of Seville, Milan, Bordeaux (with which the name of Guihelm de Sameterre, "faure d'espades," is associated), Bray, Toulouse, Chambéry (especially famous for coats of mail),



Marka of armorers, arsenals, and production centers. (1) Conrad Treytz the Elder; (2) Hans Vetterlein; (3) Christian Schreiner the Elder; (4, 5) Caspar Rieder; (6) Jörg Treytz; (7) Christian Spoer; (8) Claus Wagner; (9) Jörg Wagner; (10) Christian Treytz; (11) Hans Schröl (?); (12) Hans Prunner; (13) Hans Laubermann; (14) Hans Müllner; (15) Oswald Schreiner; (16) Christian Schreiner the Younger; (17) Hans Wagner (?); (18) Wolfgang Prenner the Elder (?); (19) Hans Robeiler; (20) Hans Seusenhofer; (21) Conrad Seusenhofer; (22) Michael Witz the Elder; (23) Hans Mayatetter; (24) Conrad Treytz the Younger; (25) Jörg Seusenhofer; (26) Michael Witz the Younger; (27, 28) Jakob Schnatz; (29) Stefan Rormoser; (30) Wolfgang Prenner the Younger (?); (31) Leonhard Reuter; (32) Bastian Katzmair; (33) Sebastian Schmid; (34) Paul Meitinger; (35) Michael Wagner; (36) Hans Hörburger the Elder; (37) Anton Hörburger; (38) Jakob Topf; (39) Hans Hörburger the Younger; (40) Hapsburg Armory; (41) Arsenal of the rulers of the Holy Roman Empire; (42) Arsenal of Vienna; (43) Helmschmied Colman; (44-48) the Missaglias; (49) Brescia; (50) Milan; (51, 52) the Negrolis; (53-57) the Piccininos.

Genoa, Florence, and London. Nearly every state and city in Europe had its own arms factory during the Middle Ages, but in the 15th century some centers began to stand out because of the fame of their products. The craft reached a very high level of quality, and the trademarks of certain families became famous throughout the West (FIG. 751). Among cities rich in celebrated armorers Milan held first place. The Missaglias (Tommaso, Antonio, Calvino, Zoanpietro etc.), the Negrolis (PL. 448) (Domenico, Niccolò, Gianpaolo, Battista, Alessandro, and Girolamo), the Modrones, and the Merates, all Milanese, were certainly the most celebrated armorers of the 15th century. They achieved such fame that they soon ceased to be considered artisans; they became friends and confidants of the princes who commissioned their arms, and their wealth and technical and artistic traditions helped them create true family dynasties of armorers. Tommaso Missaglia was knighted in 1435 by Filippo Maria Visconti; in 1446 Francesco Missaglia was given free access day and night to the chambers of the future Louis XI of France to fit the armor he was fashioning for him. When at the end of the 15th century Antonio Missaglia's house, whose richness had amazed visiting Venetian ambassadors in 1492, caught fire in Milan, it was Duke Ludovico il Moro himself who directed the fight against the fire. Still preserved intact in Vienna (Kunsthist. Mus.) is the armor that Tommaso Missaglia made about the middle of the 15th century for the Count Palatine Frederick the Victorious (PL. 444); its surface free of decorative frills, it is typical of the white armor in which Lombard armorers combined functionality and technical perfection with a monumental concept of form. There exist two other examples of the Missaglias' skill in executing arms: one in the Metropolitan Museum in New York and the other in the museum in Berne. In addition, a few miscellaneous parts are in the Armeria Reale in Turin and in the Museo Stibbert in Florence. Equally rare are the works of the other Lombard and Italian masters of the time, such as the Venetian Alberghettis (Sigismondo, Antonio, Giulio, Giovanni Battista). The influence of Oriental decorative motifs reached the Lombard factories toward the end of the 15th century, probably by way of Venice. The first to apply them were the Missaglias and the Negrolis (in fact, two visors in the Armeria Real in Madrid, which bear the mark of the Negrolis, are perhaps among the oldest pieces in existence ornamented with designs in an Orientalizing taste). Before the end of the 15th century ribbed, or fluted, armor, called "Maximilian" after Emperor Maximilian I, made its appearance. Even the parallel fluting that broke up the solid plates of the white armor was a Milanese innovation, one that enjoyed great popularity in Germany.

Already in the 15th century, in imitation of the Italians, or in competition with them, great families of armorers began to establish themselves in northern Europe — in Innsbruck, Dresden, Nürnberg, and Augsburg. Among the works of Lorenz Helmschmied (or Colman) of Augsburg are the armor of Sigismund of Tirol (PL. 444), which displays the use of fluting on the plates, and the cuirass of Emperor Frederick III, preserved in Vienna. Two suits of armor by another Augsburg armorer, K. Colman, are preserved in Vienna. One of these (PL. 444) is a typical ribbed "Maximilian," while the other (PL. 446), executed for William of Rogendorf, shows the virtuosity that was to characterize the cuirasses of the 16th century, in which the steel was folded with incredible skill to imitate the 16th-century costume. Mattheus Frauenpreiss and Anthony Peffenhauser, also of Augsburg, were active in the middle and in the later part of the 16th century. In Vienna some of their suits of armor of meticulous execution are preserved (PL. 446).

Doubtless the most flourishing armor center north of the Alps, from the middle of the 15th century onward, was Innsbruck. Here, at the end of the 15th century, Conrad Treytz (PL. 445), Hans Vetterlein, and Christian Spoer were famous for white armor and ribbed cuirasses. Claus Wagner, Christian Schreiner the Elder, and Caspar Riederer were also well known. Noteworthy in the 16th century were Conrad Seusenhofer, who made the armor of Henry VIII now in the Tower of London and that of Charles V in Vienna (Kunsthist. Mus.), and Hans Robeiler, who made a suit of armor for Charles V, now also in the Kunst-

historisches Museum. With time the number of Innsbruck armorers increased, and they constituted family groups that handed down the craft from father to son: the Treytzes (Conrad, Jörg, Adrian — 15-16th cent.); the Wagners (Jörg, Claus, Hans, Michael — 1484-1565); the Seusenhofers (Conrad, Hans, Jörg, Wilhelm — 1501-60); the Witzen (Michael the Elder, Michael the Younger, Peter — 1510-88); and the Topfs (Jakob, Anna David, Hans Jakob, Ursula, Simon — 1575-1614).

During the 16th century, Eliseus Libaerts (PL. 447) in Antwerp and Lucio Piccinino (PL. 447), G. B. Sarabaglio, Bartolomeo Canti, and Pompeo della Cesa (or Chiesa) in Milan were repeating the "grotesque" ornaments of mannerist painting on metallic surfaces, producing high relief reminiscent of contemporary stuccowork. At this time armor ceased to have any practical function, and it disappeared entirely from the war costume of the following century.

The art of manufacturing swords, however, survived in Europe. In Lombardy the Piccininos, Antonio (PL. 449) with his sons Federico and Lucio, were especially well known for their swords furnished with splendid hilts. New centers became important: Brescia, for example, noted for its swords in the 16th century and, soon after, particularly for its firearms. For the cities of Solingen and Toledo we know the names of about a hundred swordmakers who in the 16th and 17th centuries produced the most famous blades in Europe. Then, gradually, in the course of the 17th and 18th centuries, interest centered more and more on the production of artillery and firearms. Breastplates no longer provided adequate protection, and they could not be reinforced to resist the force of the new projectiles. They were replaced by cloth suits, which were slowly transformed into the uniforms of the armies of the 18th century and modern times. Weapons then became mass-produced, and the figure of the armorer-artisan-artist disappeared.

For the formation and history of collections of arms see MUSEUMS AND COLLECTIONS. Today the most important collections are found in the following museums: Ambras (Tirol), Schlosssammlung; Berlin, Zeughaus; Berne, Historisches Museum; Brussels, Musée de la Porte de Hal; Budapest, Nationalmuseum; Chur, Rüstkammer; Dresden, Historisches Museum; Florence, Museo Stibbert and Museo Nazionale; Graz, Landeszeughaus; London, The Tower, Wallace Collection, Victoria and Albert Museum; Lucerne, Musée Historique; Madrid, Armeria Real; New York, Metropolitan Museum of Art; Paris, Musée de l'Armée; Turin, Armeria Reale; Venice, Doge's Palace; Vienna, Ambras Sammlung, Kaiserliches Zeughaus, Waffensammlung, Kunsthistorisches Museum.

To these should be added, for Roman arms, the fine collection in the Museo Nazionale in Naples, and for primitive arms the various ethnological museums in Europe and America.

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Illustrations: PLs. 436-455; 6 figs. in text.

ARNOLFO DI CAMBIO. Sculptor and architect, born in Colle di Val d'Elsa about 1245, died in Florence before 1310. Early in his career, in 1266-68, he is known to have worked on the pulpit in Siena Cathedral as an assistant to Nicola Pisano (q.v.). Arnolfo's name was recorded, along with those of Giovanni Pisano, Lapo, and Donato, also pupils of Nicola, in the payments of July 16, 1267, and of October, 1268, for the pulpit, which was finished in 1269. The Consiglio dei Savi of Perugia, between Aug. 26 and 31, 1277, requested his services from his patron Charles I of Anjou, calling him "Arnulfus de Florentia, subtilissimus et ingeniosus magister." (Colle di Val d'Elsa lay in the Florentine domain.) The king, replying in a letter of Sept. 10 from his castle of Lagopesole in Campania, gave his consent and permitted Arnolfo to collect marble and other stone from Rome and its environs for the projected work in Perugia. On Feb. 4, 1281, the Consiglio paid Arnolfo for 24 days' work "pro labore et opere [sic] fontis," with an interruption of eight days for a journey to Rome, apparently his base of operations. His name ("hoc opus fecit Arnulfus") is recorded on the monument to Cardinal Guillaume de Braye (d. Apr. 30, 1282) in S. Domenico at Orvieto (badly reassembled; some fragments are in the cathedral museum); in the ciborium of St. Paul Outside the Walls in Rome ("hoc opus fecit Arnulfus cum suo socio Petro"), dated 1285; in the ciborium of S. Cecilia in Trastevere in Rome ("hoc opus fecit Arnolphus") of 1293. The Chapel of St. Boniface IV in Old St. Peter's, containing the tomb intended for Boniface VIII, was provided with the inscription "hoc opus fecit Arnolphus architectus," an indication of his architectural activity in Rome at this time. The chapel, of which certain fragments are now preserved in the Vatican Grottoes, was consecrated on May 6, 1296, and was completed in all likelihood several months before. On Sept. 8 of the same year, Cardinal Pietro Valeriano laid the foundation stone of S. Maria del Fiore (the Cathedral of Florence), then still known as S. Reparata after the dedication of its predecessor on the site. In a document issued by the Council of One Hundred on Apr. 1, 1300, freeing him of all tax obligations, Arnolfo is identified as the architect of the new cathedral ("the son of Cambio from Colle, chief master of works of the church of S. Reparata"). He was granted this privilege because he was "the most famous and expert master in the art of ecclesiastical building of any known in the region" and because "from its splendid and manifest beginnings" the cathedral promised to rise as "the most beautiful and praiseworthy church in Tuscany."

Arnolfo's formative years under Nicola Pisano must be understood in the light of the artistic orientation of Val d'Elsa,

which in the 13th century revolved in the orbit of the architectural tradition of Pisa and Lucca, and in relationship to the powerful personality of Nicola Pisano within the enclave of Gothic sculpture. The theory advanced by Carli that Arnolfo di Cambio had received some training in the Cistercian tradition early in his career should be discounted, because the capitals and impost blocks that are adduced as evidence are simply the product of the circle of capable sculptors surrounding Nicola.

Arnolfo's part in the Siena Cathedral pulpit has not yet been conclusively determined, and Ragghianti's attempt to associate him with the pulpit of the Baptistery of Pisa was unsuccessful. It is generally believed, however, following Venturi, that in the Siena Cathedral his hand may be recognized in Pisano's *Nativity* by the angular arrangement of the drapery. He also worked on the reliefs of the *Adoration of the Magi*, the *Presentation in the Temple*, and the *Flight into Egypt*, as well as on certain figures of the elect in the *Last Judgment* and on the group of prophets placed after the first of these reliefs. The soft modeling reveals Nicola's style, which serves to unify the whole work; for Arnolfo had not yet developed the severe style characteristic of later independent works.

Because of undeniable similarities to these attributions, Barsotti and Gnudi have suggested his participation in the tomb of St. Dominic in the Church of S. Domenico in Bologna, commissioned from Nicola and carried out between 1265 and 1267 with two assistants, one of whom was Fra Guglielmo. Arnolfo's style is to be discerned in the taste for simplicity and frank naturalism of the *Sanction of the Dominican Rule*, the *Story of St. Reginald of Orléans*, the *Supper of St. Dominic*, and to a lesser extent in other compositions.

De Nicola indicates that the remnants of the monument to Cardinal Annibaldi della Mola (d. 1272) in the cloister and church of St. John Lateran in Rome (PL. 465) reveal the measured style of Arnolfo at the stage it had attained in that year. The recumbent effigy, shown in full round, is characterized by the simple treatment of the planes of the face and by the stiff drapery with its surface decoration, so that an almost Romanesque compactness results. The group of celebrants in high relief — set against a background which is not smooth but incrustated with mosaics — is marked by a rhythmic placement which recalls to Keller, perhaps as the result of a common Lombard influence, certain contemporary French reliefs. On the other hand, the ornate geometric mosaic patterns in the background, with their rich coloration (seen also in the bases with their sharp architectural articulation), are derived, according to Salmi, from the Campanian pulpit tradition. This connection with the south may be explained in the light of our knowledge that Arnolfo, after leaving Nicola Pisano's shop, where the personality of Giovanni was already assuming a preponderant position, went to Florence and in 1272 was engaged by Charles of Anjou, in whose service we find him five years later (see above). It seems evident, therefore, that the sculptor, about whom we have no further information until 1277, had followed the king and had completed his education in Apulia in the relief style that he employed in the tomb of Annibaldi, possibly commissioned by Charles of Anjou.

This sepulchral monument, with its use of a curtain as an element linking the effigy to the funeral rite, became the prototype of the Gothic tombs of Rome (e.g., the tomb of Stefano de Surdis in S. Balbina by Giovanni di Cosma, 1303). More complex is the contemporary monument of Adrian V (d. 1276) in S. Francesco in Viterbo, which has been attributed to Arnolfo by Venturi. The long, rigid form of the recumbent pontiff is placed within a gabled aedicula, closed and solid in structure. The aedicula is adorned with two small heads of putti in bas-relief, somewhat inferior in quality in comparison with three other heads in half round, the head of St. Peter at the apex of the gable being the finest.

The monument of Adrian V demonstrates an indissoluble fusion of architecture and sculpture and a close collaboration with Roman marbleworkers, perhaps in this case with Pietro di Oderisi, who had been commissioned for certain works by Westminster Abbey in London. Pietro had created the monument of Clement IV in the same church in Viterbo, and

he must have been Arnolfo's collaborator in the ciborium of St. Paul Outside the Walls (not Pietro Cavallini as has been sometimes asserted). Arnolfo's contact with architectural forms in Siena and Florence was reinforced in Rome by his acquaintance with the Cistercian Gothic style of southern Italy as it had developed under Angevin rule (cf. the projecting crockets of the gable executed freely in the French manner).

The statue of Charles of Anjou as a Roman senator (PL. 458), now in the Capitoline Museum, has been recognized as Arnolfo's work by Wickhoff and is perhaps slightly later in date. In its general aspect it derives from the decapitated statue of Frederick II from the triumphal gate of Capua, now in the Museo Campano in that city. The statue of Charles is characterized by fluid volumetric transitions, by the severity of the lines, and by the planes extended to sharp dividing ridges. This solemn and courtly work was inserted in an arch, of which a fragment showing a headless trumpeter is preserved in the Capitoline Museum. Here again the work is linked to an architectural setting, a connection which cannot now be observed in the case of the three isolated, thirsting figures (PL. 459; VI, PL. 364) in Perugia (Gall. Naz. dell'Umbria), which originally formed part of a basin collecting water beneath the monumental fountain erected in Perugia by Nicola and Giovanni Pisano as a splendid ornament for the main square of the city.

The fountain was put into service in 1277 ("fontes completur"). If the basin of the fountain belongs to the year 1278, the possibility that the three remarkable sculptures of Arnolfo are still later cannot be excluded, so they may date from 1281. Severely cubic, these works recall Etruscan work by their archaizing quality, although this may be more appropriately understood as a tormented inner vitality contained by Gothic forms. Another fragment of about the same period is the statue of a seated figure, headless and shown writing, which was discovered by Mariani in the courtyard of the archiepiscopal palace in Perugia. This work, in a heavy, voluminous manner, undoubtedly formed part of a monument for a Perugian professor of the time.

In the monument of Cardinal de Braye in Orvieto (PL. 457), one is impressed by the nervousness of Gothic forms vibrating in the feverish figures of St. Peter, St. Dominic, and the effigy of the deceased. The Virgin holding her Son is enthroned as an empress (PL. 456), and shows classical influence; this tendency is found also in the statues of the angels drawing back the curtain and revealing the effigy of the cardinal. Despite the inadequate reconstruction of the ensemble, its artistic intent is evident. The pedestal and the sarcophagus, with its strongly projecting twisted colonnettes placed before niches surmounted by segmental arches, provide a horizontal emphasis, which is reinforced by the successive superposition of individual parts culminating in an aedicula, so that the ever-present Gothic verticalism is effectively held in check. The cusped aedicula surmounting a pointed trilobed arch and flanked by two small pinnacles formed the starting point for a typical scheme in Florentine architecture. (This motif is repeated in the monument of Benedict XI in S. Domenico in Perugia.)

The bronze statue of St. Peter in the Vatican (assigned to the 13th cent. by Didron and Wickhoff) is an instructive example of renewal of Early Christian forms. The sculptor was aware of the antique-philosopher type and its connections with the iconographic tradition of the apostle (as attested by a statuette of the 4th or 5th cent. discovered at Charsadda in north-western Pakistan), so that it was possible for Cecchelli to maintain that the celebrated bronze was in fact of Early Christian date, whereas the hard stamp and the quality of the modeling and the drapery folds are characteristically Arnolfian, as Venturi has shown. A similarly sober classicism, again comparable to 4th-century works, is expressed in four statues of imposing solidity, those of SS. Peter, Paul, Timothy, and Benedict belonging to the ciborium of St. Paul Outside the Walls (PL. 462). The placement of these figures between aediculae with angels parallels Campanian pulpits. Here the spandrels of the arches shelter Adam and Eve, Cain and Abel, and two pairs of prophets, whose white forms stand out against an incrustated ground, each face of the ciborium being surmounted by a triangular

gable with angels bearing roses in the manner of antique winged Victory figures. Contrary to the opinion of Keller, who denied that Arnolfo participated personally in this work, De Francovich has been able to assign three pediments to his assistant Pietro, excepting the one on the side of the two crowned prophets, as well as almost the entirety of the interior, which is covered by a ribbed vault with a fine keystone surrounded by busts of angels. The distribution of sculpture is controlled by the dictates of a monumental architecture. Above the pointed trilobed arches, the pedimental gables, the pinnacles, and the central finial assert a horizontal tendency derived in part from the Romanesque ciboria of Rome. The rising verticalism is thus controlled by the rigid linearism of the membering, in a tense equilibrium between sculptural and coloristic values. Moreover, the taut and somewhat dilated form at the arches does not conceal the fact that the main aim of the artist is the attainment of a certain spatial breadth, previously achieved in the interiors of the castles of Frederick II.

The ciborium of S. Cecilia in Trastevere (PL. 461), with even wider arches (raised, however, on a high base and embellished with garlands) and with more depressed gables, moves toward a more emphatic horizontal quality and a marked spatial breadth. Two prophets, the four evangelists, and the two figures representing the parable of the Wise and Foolish Virgins in the spandrels are animated with a greater human warmth; whereas the four statues at the corners (SS. Cecilia, Tiburtius, Valerian, and the latter's baptizer, Urban I), emerging from niches, achieve, with their compact volumes, a vivid plastic quality, in which the stamp of antique inspiration is everywhere evident — an inspiration that may have been transmitted through Ottonian ivories, as Bottari suggests. The association with Roman marbleworkers continues in this ciborium, two reliefs of which (Gabriel and the Virgin Annunciate, in the high pedestals of the columns) were hidden as a result of the transformation of the choir in 1599. Of earlier date is a fine small figure of a Madonna and Child in the frieze of the tomb of Luca Savelli in the church of the Ara Coeli. This work is very close to the statues of the *oratorium praeseptis* (crèche) preserved in S. Maria Maggiore. These figures belonged to an ensemble whose structure seems to have been remodeled by Arnolfo — not at the time of Honorius III, as Vasari supposed, but under Honorius IV Savelli (1285-87). The group was transferred in 1586 to a place below the Sistine Chapel of Domenico Fontana and provided with spandrels forming arches, which are filled with two intense prophets, David and Isaiah, these also by Arnolfo. As for the statues ascribed to the master by Venturi, although the two standing Magi and the St. Joseph together with the ox and the ass reveal the workshop, the kneeling king has a firmness of stance and a human quality that must be referred to Arnolfo himself. The putto and the Virgin were replaced by a group by Francesco da Pietrasanta (or rather, simply recarved, according to W. Messerer), while the Madonna with the Child seated in her lap is in a much drier style than the other statues of the crèches and is therefore of different origin and not by Arnolfo.

Arnolfo has conveyed a more intense monumentality in the serious figure of Boniface VIII recumbent on his funeral couch, with its curtains arranged in angular folds (note especially the vigorous and erect bust of the Pope). The case is different with the angels holding the curtain, which are certainly workshop pieces. The Chapel of St. Boniface in Old St. Peter's, which originally contained the monument (reproduced by Ciampini), had the appearance of a ciborium with a classical entablature surmounted by pinnacles and small cusped aediculae corresponding to Arnolfo's other ciboria. Like these works, it probably possessed an interior vaulted structure. The master, calling himself here "architector," paid careful attention to the disposition of the whole, which is in close accord with what is known of the decoration of the old, unfinished façade of the Cathedral of Florence, demolished in 1588 but preserved in a drawing in the cathedral museum and in a fresco by Poccetti in the cloister of S. Marco in Florence (PL. 463).

In the early part of 1296, Arnolfo, then back in Florence, began the construction of S. Maria del Fiore from the façade. The original arrangement is still suggested by the present one, with its horizontal and trabeated membering (except the parts which are additions of the Renaissance period) and with its cusped aediculae terminating the side portals, as if crowning them, despite the successive modifications of Francesco Talenti and others, who added the revetment of small rectangular decorative panels (a feature which was repeated more minutely and monotonously on the flanks by Arnolfo's successors). The central portal was to have been completed with a trilobed arch similar to that of the ciborium of St. Paul. Arnolfo brought with him to Florence a group of Roman masters who were responsible for an altar now preserved in fragments in the Badia in Florence, as Salmi has shown. Of their work there remains also, in the museum of the cathedral, the architrave of the central portal as well as a rose-colored marble slab, filled with Cosmati intarsia work, which provided the setting for the Virgin and Child (PL. 464) in the same portal. In this group Arnolfo simplifies the very solid volumes, so that an ideal purity is achieved in the case of the mother and a Roman solemnity in that of the child. The figure of St. Reparata (PL. 460), which according to Toesca belongs to this group, was animated by an inner spirituality; this is not the case with the St. Zenobius (wrongly called St. Podius), which was the pendant of St. Reparata (cf. Becherucci) and seems to have been carved (or at least completed) by a 14th-century artist. Nevertheless, Arnolfo's workshop was responsible for a considerable part of the façade, as several preserved heads and certain sections of one of the fragmentary reliefs of the lateral lunettes attest. Outstanding are the *Nativity* (whose composition may in large part be reconstructed by referring to the terra-cotta copy by Michele da Firenze in the Cappella Pellegrini in S. Anastasia in Verona) and the *Dormition of the Virgin* (more or less faithfully reechoed in a relief by the same artist in the Church of the Tomba at Adria), where the figures, in high relief or partial round and set against polychromed backgrounds (PL. 459), are in their rhythmic cadence subordinated to the architecture. The Virgin of the former group (now in the cathedral museum) is seen raised up on her couch, Etruscan accents being discernible beneath the Gothic forms, while the torsion of the body informs the figure with a strikingly human and poetic feeling. However, a shepherd (Florence, Coll. Torrigiani) and a relief with part of the *Annunciation to the Shepherds* from this group are to be assigned to the workshop, as Piera Bettini has shown. Of the *Dormition*, the dead Virgin and a St. John at her feet, as well as the heads of two apostles, turned in an expression of sadness, were in the Kaiser Friedrich Museum (Berlin) before World War II. All these are presumed to be workshop pieces, as is suggested by their heavy and hard aspect. Also in this category are the heads of Christ and of the Virgin, various male heads, and the angels who bore the curtains of the lunettes, all of which are in the cathedral museum. The final expression of the Arnolfian style is found in an *Angel of the Annunciation*, now in the Fogg Museum of Harvard University but originally, in all likelihood, placed on the cathedral façade. In its quiet yet emotionally felt gesture, the figure is comparable to that of St. Reparata (see above). The monumental statue of Boniface VIII in the cathedral museum, Florence, was completed by a follower, and there remain only certain minor fragments in Florence, Rome, Naples, and Benevento which show signs of Arnolfo's manner. Among the attributions, one is possible (a deacon with a canopy — part of a tomb formerly in the Lanckoronski Collection in Vienna); one debatable (the bust of a pope in the museum of the Palazzo Venezia in Rome); and three are unacceptable (the bronze group of nymphs by Giovanni Pisano in the Perugia fountain; the ivory Madonna, also by Giovanni in the Treasury of Pisa Cathedral; and the funeral statue, supposedly by Salvino degli Armati but to be assigned to an unknown sculptor of the 14th century, in S. Maria Maggiore in Florence).

To summarize Arnolfo's sculptural achievement: he derives from the soft manner of Nicola Pisano and then proceeds to develop a well-defined and concise language of form. Plastic

values occupy the preeminent place — the forms are sometimes tense but more often bulky, especially in the last period, where his work is informed by a contained and serious quality appropriate to a Florentine and, in its solemn articulations and rhythmic cadences of relief, brings to full development certain possibilities implicit also in the work of Giotto (q.v.).

Vasari credits Arnolfo with certain architectural achievements in Florence, including responsibilities as adviser in the new circuit of walls (decreed in 1284), and with the design of Castel S. Giovanni and Castelfranco in the upper Arno Valley. Attributed works include the loggia and pilasters of Orsanmichele, later renovated and transformed into the present splendid structure; the loggia of the Signoria, which was erected in the late 14th century; and the angle pilasters of the Baptistery in alternating green and white marble bands, replacing the original ones of gray sandstone. Another structure attributed to Arnolfo by Vasari is the Gothic rebuilding of the Badia (1284-1310), which was transformed into the present arrangement by Matteo Segaloni in 1625. The Gothic church consisted of a short nave opening into a three-aisled central section, terminated by a choir divided into three oblong chapels; it possessed, therefore, what was in effect a long transept like those of Sicilian churches (cf. the Cathedral of Monreale, the Church of the Vespers at Palermo, and the Badiazza at Messina), corresponding to the southern Italian elements in Arnolfo's background. The elevation of the building, terminating in a wooden roof, except for the chapels, which had ribbed vaults, was developed along somewhat Romanesque lines, a tendency which was reinforced by the masonry in *pietra forte* and gray sandstone. The still largely preserved choir façade, with its horizontal cornices and salient pilasters following Cistercian precedent, has been rightly given to Arnolfo by Middeldorf and Pastz, as confirmed by Salmi's identification of certain decorative fragments.

Arnolfo's architectural capacities seem to have been first demonstrated in Rome. A recent hypothesis, put forward by Cellini, recognizes his hand in the structure joined to the left flank of the Ara Coeli, or "tribunal," which Charles of Anjou caused to be erected so that he might give justice in his office as a Roman senator; the statue of the king, now in the Capitoline Museum, may have been located here originally. Divided into three parts by pilaster strips, the central section of the tribunal is articulated in two levels, with pointed arches framed by horizontal strips and surmounted by a cornice which is prolonged into the section of the transept flank corresponding to the Savelli Chapel and flows around the choir until it joins the crowning of the central apse. Belonging also to Arnolfo's transformation of the building are the spacious transept of the building and the tall pointed-arched windows of the clerestory of the nave. (These windows reappear in the Cathedral of Orvieto and in Sta Croce in Florence.) The Arnolfian attribution appears to be confirmed by the emblems of the Savelli on the exterior of the transept, surmounted by feminine heads in the style of Arnolfo.

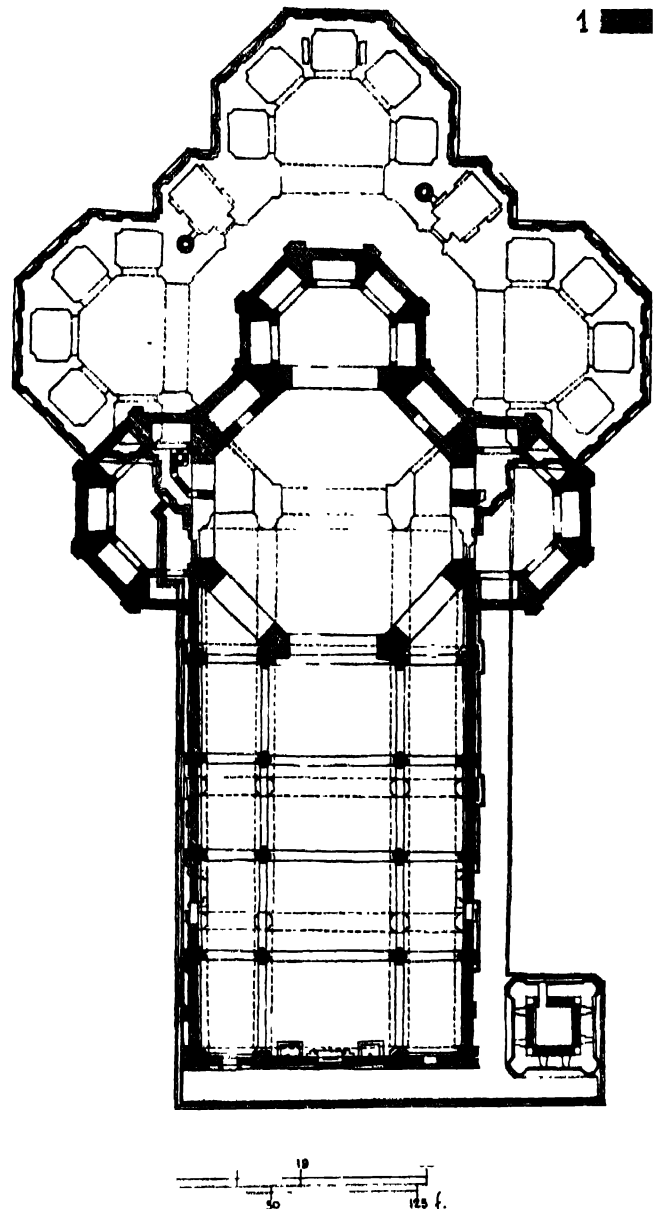
The old Church of Sta Croce occupied a magnificent site almost on the edge of the second wall of Florence (1172) until it was decided in 1259 to rebuild the structure entirely and enlarge it. This work was begun in 1295 and was carried on on rather slowly; the roofing dates from between 1341 and 1383 and seems to have been completed in the latter year, although the church (PL. 463) was not finally consecrated until 1442. The plan, with transept and double sequence of vaulted rectangular chapels proceeding from either side of the polygonal apsidal chapel (similar to the arrangement in the upper church at Assisi), continues a fairly common scheme in Franciscan architecture, while the open timber roof is also a typically Franciscan feature. The whole, however, reveals a remarkable artistic personality in the contrast between the great height of the main chapel and the low elevation of the side ones, visible from all parts of the vast nave, which comes to a climax in the enormous triptych formed by the main chapel and the two at its sides. This feature is related to the arrangement found at S. Lorenzo in Naples. In the Florentine structure, space spreads easily through the great arches into the high side aisles with a monumentality which could not have been achieved

without knowledge of the great Norman churches of Sicily and the Angevin churches of Campania. On the other hand, the wide space of the central nave has been linked by Paatz to the major early Christian basilicas of Rome. Sta Croce, therefore, represents architecturally the same currents of influence which were observed in Arnolfo's work as a sculptor. Moreover, the strongly salient horizontal accent of the membership, proceeding from a background of verticals rising from the octagonal piers, holds the Gothic verticalism in check until it is finally halted by the horizontal beams of the roof. (Triforium pilasters of this type, already seen in the Cathedral of Ruvo, passed into Siena Cathedral in all likelihood on the advice of Nicola Pisano, and perhaps at Arnolfo's suggestion into the Cathedral of Orvieto a little after 1290. The Cathedral of Orvieto has been linked to Sta Croce by Bonelli in terms of its broad spatial concept.) The bays of the flanks are faced with pedimental "frontispieces," that is to say, gables, whose roofs are provided with rain gutters, in order to cover the nave and aisles, thus creating a new and unique composition recalling that of the ciboria of Arnolfo in Rome. Thus Vasari's attribution finds stylistic confirmation.

In the Cathedral of Florence, despite Francesco Talenti's enlargement and his new organization of the piers, Arnolfo's plan has been retained in the total width of the building; however, the three aisles, divided equally into four bays, would have been shorter and covered by barrel vaults. There still remains in the present church another Arnolfian feature, the strongly projecting cornice (not successfully realized by later executants and placed too low in relation to the vaulting), which acts to limit the vertical ascent. Also Arnolfo's was the concept of the eastern trefoil, surmounted by a cupola, perhaps a combination of the basilican plan with that of the *cellae trichorae* of Rome and Sicily, or, on the other hand, possibly derived from the plans of the imposing churches of Cologne, with which the artist was probably familiar. It seems that he also envisioned the erection of an octagonal cupola comparable to the existing one and rising steeply to an apex, in imitation of the cloister vault of the adjacent Baptistery, then thought to be a work of purely Roman style.

The present Cathedral enlarges on Arnolfo's original intention of providing broad spaces between the architectonic forms. The façade, which Arnolfo had outlined with pilasters projecting as pinnacles in order to express organically the divisions of the interior, was to have been surmounted by three triangular gables (like those on the Cathedral of Orvieto). He also intended that the flanks be provided with such gables, of the same type as those still to be seen on the southern flank of the Cathedral of Mantua; these gables were adopted in Talenti's project (one was constructed only to be demolished in the 16th century).

An old tradition recorded by Vasari makes Arnolfo responsible for the Palazzo Vecchio as built between 1298 and 1310. Although his name is not mentioned in the documents, it is known that the Signoria applied to the cathedral workshop for public buildings. Arnolfo, therefore, must have been involved at least to the extent of giving advice, so Lensi believes, in the projected work, which was an expansion of the type of the Palazzo del Podestà (now the Bargello) and so closely resembled the Castello di Poppi. The Palazzo Vecchio, however, surpasses both of these buildings in its rigorously geometric character and in its bossed rustication, recalling the enclosing walls of the Forum of Augustus in Rome in its sturdy vigor and in the strong contrasts of light and dark, while the combination of an imposing crenelated gallery and the round arches of the rows of windows gives a substantial horizontal accent to the entire building. The tower, audaciously placed off center (because, Vasari claims, the existing tower of Foraboschi or della Vacca was to be preserved), conveys in its constructive boldness and moderate elevation a sense of order and equilibrium. In its termination the tower recalls that of S. Miniato, which was destroyed in World War II and which was perhaps derived from southern Italian prototypes. Certain characteristics, certain achievements in space composition, and the monumental quality of Arnolfo's architecture left such a



Plan of the Cathedral of Florence: Comparison of the existing church and that of Arnolfo. Key: (1) Perimeter of Arnolfo's plan.

stamp on the Gothic buildings of Florence that Villani could rightly say that in her grandeur she became "the offspring and creation" of Rome. Arnolfo's spirit is echoed in the walled *enceintes* (*terre murate*) of Tuscany, attributed to him by Vasari, such as those of S. Giovanni and Castelfranco, and especially Terranova, in the upper Arno Valley. Arnolfo's achievement as a sculptor and architect, within the limits of its fundamentally medieval orientation, must be regarded as a new form of expression, reflecting a characteristically Italian spirit in a way comparable to the new style of Giotto or the *vulgare eloquio* developed as a literary medium by Dante. And just as Dante and the other poets of the *dolce stil nuovo* drew on their knowledge of Provençal and Sicilian precedents, so did Arnolfo, working with the aid of comparable sources, succeed in raising his own art to new heights of expression.

SOURCES AND CRITICISM. Arnolfo's name is not mentioned by any Florentine writer of the 14th or 15th century. Antonio Billi, however, records briefly in his *Libro* (ca. 1516-30) that "Arnolfo the German, as associate of Cimabue, made the model and plan" of the Cathedral. Vasari, in the first edition of his *Lives*, repeats Billi's statement; in the second edition of 1568 he supplies a biography placed after that of Cimabue, calling him erroneously "Ar-

nolfo di Lapo tedesco." Nearly two-thirds of the account is devoted to pre-Renaissance architecture, referring to architects who are almost completely unidentifiable, such as the mythical Lapo, and the section dealing directly with Arnolfo is limited to the architectural side of his work. Vasari concludes with a critical judgment much like that made on Cimabue: Arnolfo's achievement consisted of a certain improvement in the state of his art. As for the sculptural aspect of his work, Vasari says vaguely only that "he created drawings to be used for sculptures." Not until Baldinucci's work appeared (1728) was there any mention of certain of the works in Rome discussed above. In this connection Cicognara and other writers of the 19th cent. provided brief notices devoid of critical value and documentary research carried out in the 18th cent. simply summarized the data given above. Arnolfo's sculptural activity has, however, assumed definite outlines thanks to the work of modern criticism, notably that of A. Venturi on the origins of the artist, supplemented by the results of several special studies on Nicola Pisano, including those of G. Swarzenski and Nicco Fasola. The work of Keller has provided information concerning the problem of collaboration with other artists, the details of which have been revised by De Francovich. Since the examination of the building history of S. Maria del Fiore has shown that it underwent important modifications in the course of the 14th cent. (cf. Boito and Guasti), Arnolfo's reputation as an architect seemed at first to have lost all consistency (cf. Supino). Only little by little, following the researches of Middeldorf and Paatz, Salmi, and Cellini, are we returning to a comprehensive and unified view of the twin aspects of the artist's personality. (Frey's attempt to distinguish an older Arnolfo di Cambio da Colle, the architect — who died before 1310 — from an Arnolfo Fiorentino, the sculptor, is now generally rejected.)

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Mario SALMI

Illustrations: PLS. 456-465; 1 fig. in text.

ARP, JEAN (HANS). French sculptor, poet, and one of the pioneers of abstract art, born in Strasbourg, Sept. 16, 1887. (The artist uses Jean or Hans as a first name according to the language employed.) After studying art at Strasbourg and Weimar and at the Académie Julian in Paris, Arp settled in Weggis, Switzerland, in 1909, where, in isolation, he produced works almost entirely abstract in design. In 1914 he was in Paris in contact with Apollinaire, Picasso, and Delaunay. In 1915 he moved to Zurich, where the following year he became one of the leaders of the Dada movement. With the dancer and artist Sophie Taeuber, whom he married in 1921, he experimented in creating "anonymous" collective works of art. These were often free, almost automatic drawings which were then torn apart and rearranged "according to the laws of chance." In his abstract reliefs in wood after 1917 he continued to juxtapose irrelevant elements in the Dada spirit (as in *Shirt Front and Fork*, first version 1922). In 1925 Arp participated in the first surrealist exhibition in Paris, and after settling in Meudon in 1926 his relations with the French avant-garde became even closer. In 1931-32 he began his sculptures in the round, in stone and bronze, under the generic title of "concretions," since he contends that such objects are real and concrete entities, not abstractions from or representations of natural forms. "I love nature, but not its substitutes," he declared (1932). His poetic fantasy, which embraces the whole realm of nature and human experience in its irrational as well as its reasonable aspects, is expressed in forms suggestive of organic growth executed with impeccable technical mastery. In his "human concretions," such as the example of 1935 in the Museum of Modern Art, New York, the biological indications enhance the concept that the object has been produced by a human being, in Arp's sense that "art is a fruit that grows in man, like a fruit on a plant, or a child in its mother's womb." The chronology of his work is frequently obscure, since throughout his career Arp has made many duplicates and replicas of his sculpture, often in different materials, and has occasionally returned to a subject after many years to create a new version.

His work may be seen in most collections of modern art in Europe and America; important examples in the United States are in the Museum of Modern Art and the museums of Philadelphia and Chicago. His sculpture on a monumental scale can be seen in the large wood relief at the Harvard Graduate Center (1950) and, in metal and cement, at the Ciudad Universitaria, Caracas, Venezuela (1956). Arp is also a prolific and gifted poet, writing in both French and German, and has published several collections of verse. See SURREALISM; V, PL. 132.

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George Heard HAMILTON

ART. The concept of art, the history of its definitions, the proper place of esthetic pursuits among the pursuits of the human mind, are the object of a specific philosophic study for which see ESTHETICS. The present article, referring exclusively to figurative art, does not approach the problem from the point of view of general esthetics, which obviously can not be limited to any one branch of the arts. Nor does it attempt to construct a particular esthetics of figurative art, since this would result in as many special esthetics as there are techniques of art, indeed, as many as there are works of art. To take the point

of view of phenomenology and base this study on what may be called the range of figurative phenomena would demand a universal history of art and would duplicate all the historical articles included in this encyclopedia. It seems more appropriate, therefore, to approach the subject matter by considering common factors rather than individual phenomena, by examining how the various phenomena which are called "figural" were produced and organized, and by studying the various relationships by which, in the course of history, those phenomena are at once determined and determining.

SUMMARY. Phenomena of figural art (col. 765): *Range of the subject; Terms indicating artistic activity; Origins attributed to artistic creation; Practical and esthetic purpose.* Problems of representation (col. 775): *Methods of classification; Materials and techniques; Ornamentation; Art as representation of visible reality; Art as representation of nonvisible reality; Art as representation of the unreal; Art and history.* The work of art in the world (col. 794): *The social condition of the artist; Society's evaluation of art works: a. Replicas, copies, fakes, reproductions, means of study and documentation; b. Art, production, custom; c. Dealing and collecting; d. Preservation of the art heritage; e. Teaching; f. Art criticism and art history.*

PHENOMENA OF FIGURAL ART. *Range of the subject.* Throughout history, artistic phenomena have been distinguished, as products of human will and action, from natural events; hence the opposition of "natural" to "artificial." A further distinction sets apart among the activities of man those which result in the production of objects, specifying that there can be no art where no objects are produced. [This distinction, suggested by Plato (*Sophist*, 219a) does not imply a separation of the visual or plastic arts from poetry or music or the dance: obviously the words in poetry, the sounds in music, the attitudes of the body in the dance may be considered as objects at the moment when they are presented to the perception of our senses.]

Not all objects produced by man have an artistic value, nor are there any classes of objects which can be considered artistic as a whole; on the other hand, no categories can be considered entirely nonartistic. Even the distinction between objects of an instrumental nature (e.g., tools made to produce other objects) and objects which are artistically valid per se does not represent a distinction between artistic and nonartistic objects, since even a tool, an implement, or a machine can achieve artistic value as a finished object.

The fact that certain objects or classes of objects have been produced with the specific and exclusive purpose of achieving artistic value has been offered as a criterion by which to distinguish between artistic and nonartistic categories. However, it may happen that objects produced with the explicit purpose of achieving artistic value may be judged nonartistic, while others, with an obviously practical purpose, may be judged artistic. Actually, some modern scholars go so far as to hold that the artistic intention is an obstacle rather than a prerequisite to achieving an artistic result; hence the discussion, ever renewed and never concluded, of the intrinsic or extrinsic purpose, and therefore of the autonomy or heteronomy of art.

From these premises are derived some general conclusions: (1) Although every artistic object is the product of a technical process, technical mastery is not sufficient to guarantee the artistic value of the result. (2) Even with a definite artistic intention and correct technique, the artistry of the result is still uncertain; hence the tendency to view it as determined by imponderable factors or by factors which escape the normal modes of behavior control (fantasy, ecstasy, dream, etc.) and which affect the creative process by diverting it from accepted techniques. (3) Artistic value can be estimated only in the finished work and through a personal judgment. Thus it can be stated that artistic value exists, in the practical sense, only in the esthetic judgment which recognizes it.

Apart from philosophic attempts to define the place of artistic activity among the pursuits of the human mind (see *ESTHETICS*), the very question of the essence of art is constantly linked with another question: that of the judgment through which artistic value is determined. This judgment is sometimes a recognition in the actual work of certain general prin-

ciples described as absolute esthetic values ("beauty," however this may be defined), sometimes a result of a thorough inquiry into the individual works (see *CRITICISM*). In the first case the activity of the artist is considered as conforming to those principles given a priori, or as a realization of a certain idea of "beauty"; in the second, "beauty" is considered to be produced through the process followed by the artist. In both cases, however, judgment is given on the formal result, but only as a proof of the worth of the process followed by the artist.

Judged strictly by its products, art may therefore be considered as a way of human behavior which uses preexisting techniques but goes beyond these, creating values which are no longer technical, but esthetic. Such values are typically qualitative, since they always spring from an innovation of the creative process and not from repetition, consequently they differ from the quantitative economic or utilitarian production. Every work of art, whatever shape it takes (even utilitarian), is always unique, an "original." Artistic products represent, therefore, within the larger field of man-made products, the category of "originals" or of "quality." Every work of art exists as such only in the eye of the critic who acknowledges it; every response or reaction of society to the work is the result of an explicit or implicit appraisal. Finally, every exercise of criticism is applied to the artist's process and, ideally, traces, indeed, repeats it. Consequently, by understanding the work of art, society makes the artist's process its own and gradually absorbs and assimilates it into the community behavior and into the common productive process. For this reason society has always acknowledged a broad range of educational and formative functions in art.

Terms indicating artistic activity. In the Indo-European languages of major cultures, either ancient or modern, there is no single root common to the various terms indicating artistic activity. The Italian (*l'arte*), French (*l'art*), Spanish (*el arte*), and English (*art*) all go back through medieval and classical Latin (*ars*) to an Indo-European stem **ar-*; the German *die Kunst* goes back to the Indo-European **gn-*; the Greek τέχνη (from *τέχων) derives from *τέκν-; the Russian *iskusstvo* is related to the Indo-European stem **-sko-*, rather than to the Gothic *hausjan*, as was once believed (cf. E. Berneker, *Slawisches etymologisches Wörterbuch*, I, Heidelberg, 1924, p. 433). But passing from a purely etymological research to an inquiry into the actual usage of these words, it is easy to see that their meaning is analogous or, indeed, identical in the various languages.

On the other hand, formal identity within each linguistic tradition should not deceive us. The meaning of *arte* in 14th-century Italian, or of *Kunst* in Old German, is completely different from the meaning of *arte* or *Kunst* today; the word which was once applied to a way of working according to definite rules (therefore including even scientific or philosophical research, as well as any trade or profession) refers today almost exclusively to the artist's activity — an activity which can be, and in fact has been, considered free from any rules. Thus we have, within the same linguistic tradition, words identical in form but differing in meaning according to the period in which they are used; and different words, belonging to different languages, which have an almost identical meaning. This apparent paradox is evidence of the long process of evolution and mutual assimilation of our languages and cultures.

At the beginning of this process, as we have seen, there is no word whose usage or meaning corresponds, even roughly, to the words indicating artistic activity today. In Sanskrit the following terms are derived from the root *śilpa* (possibly connected with the Indo-European **pikrō-*): the adjective *śilpa-*, "colored"; the compound term *su-śilpa*, meaning "endowed with a beautiful form, beautifully decorated" (cf. H. Grassmann, *Wörterbuch zum Rig-Veda*, 3d ed., Wiesbaden, 1955, col. 1555); and the neuter noun *śilpa*, which originally signified coloring but later came to mean any craftsmanship and all forms of artistic talent (in Hindi, *śilpa* means "art").

In ancient Iranian, the Avestan *taian* and *humara*, derived from the Sanskrit *sū-nāra* (cf. H. Reichelt, *Awestisches Elemen-*

tarbuch, Heidelberg, 1909, p. 511) are the two terms most nearly equivalent to the English "artist" (German *Bildner*) and "art."

The word nearest in meaning to our "art," however, owing to the continuity of our historical and cultural tradition, is the Greek τέχνη, at least in certain usages. Its root is *tekh-, an Indo-European base which is also the origin of the Greek τέκτων, "artisan," then "architect"; the Sanskrit *takṣan*, "carpenter"; and the Latin *texō* (cf. E. Boisacq, *Dictionnaire étymologique de la langue grecque*, 3d ed., Heidelberg-Paris, 1938, s.v. τέκτων; and A. Walde and J. B. Hofmann, *Lateinisches etymologisches Wörterbuch*, Heidelberg, s.v. *Texō*). The original meaning of this root *tekh- must have been "mettre en œuvre" (Boisacq). Τέχνη is then first of all the capacity to achieve something, an "habileté" (according to Boisacq) mainly manual (in working metals: *Odyssey*, III, 433; or wood, to build a ship: *Iliad*, III, 61). Like another word semantically akin, μηχανή, it referred not only to skill but also to the products of skill, the works and "evil arts" (cf. the uses of synonyms, in Stephanus, *Thesaurus Graecae linguae*, VIII, Graz, 1954, cols. 2112 C-2113 B). Τέχνη was not innate but the result of a "learning," of a μαθεῖν (Plato, *Protagoras*, 312), and as such the object of an ἐπιστάσθαι, of a "knowing" (Herodotus, I, 130). It was therefore distinguished both from φύσις, i.e., natural disposition, and from μανία, the "divine excitement" (Plato, *Phaedrus*, 245a).

At the same time τέχνη referred also to the set of rules governing a certain activity; particularly to the "doctrine" par excellence, that of rhetoricians and grammarians (Stephanus, op. cit., cols. 2110 and 2113 C-D); τέχνικολ, with no further specifications, were therefore the "magistri dicendi"; τέχνο-γραφῶ meant "I write on rhetoric" (Stephanus, op. cit., s. vv.) and τέχνολόγος was the writer of grammar and rhetoric (Philodemus, *Rhetoric*, I, 203).

In Latin, where we find also a cognate word for τέχνη, i.e., *techna* (Stephanus, op. cit., 2113 C), the latter meaning was expressed first by *ars*, which was to become the exact equivalent of the Greek word. We infer the first meaning of *ars* from its root and from the usage of archaic Latin authors; etymologically the word is related to a whole series of words meaning "une façon d'être ou d'agir" (Middle High German *art*, modern German *Art*, "mode" or "manner"; Sanskrit *ṛtīh*, "mode, manner"; see A. Ernout and A. Meillet, *Dictionnaire étymologique de la langue latine*, 2d ed., Paris, 1951, s.v. *Ar*). The word appears with this meaning, and sometimes with that of "skill" (Pseudo Probus, in *Grammatici Latini*, ex recensione H. Keilii, IV, p. 47: "ucteres artem pro uirtute usurpant") or of "machination," in Plautus, Terence, and Sallust.

This shows an analogy between *ars* and some uses of τέχνη; when rhetoricians and grammarians equated the Greek and Latin words, they became synonymous. Thus *ars*, like τέχνη before, became "praeceptio quae dat certam viam rationemque faciendi aliquid" (Philo Byblius, I, 1), and then "rei cuiusque scientia usu uel traditione percepta tendens ad usum aliquem uitae necessarium" (*Diomedis Artis Grammaticae libri III*, ed. H. Keilii, Leipzig 1867, I, p. 421), and finally a skill, even a professional one (a *Geschicklichkeit*; see A. Walde and J. B. Hofmann, op. cit., s.v. *Ar*).

This latter meaning, and the relative distinction between *artes ingenuae* or *liberales* and *artes sordidae* (already existing in classical Latin; cf. A. Ernout and A. Meillet, op. cit.) prevailed throughout the Latin Middle Ages (cf. C. Du Cange, *Glossarium mediae et infimae latinitatis*, Niort, 1883, s.vv. *Ar*, *Artes*, *Artista*) where *ars* is "technique" or "craft," *artes* are the "societates mesteriorum," and *artista* is the member of one of these societies. At the top of the medieval arts and crafts are the "septem artes liberales."

These meanings of *ars* were carried over into the various Romance languages, where for a long time they remained the only accepted meanings: in Spanish, for instance, where we find *el arte* as far back as 1144, these meanings survived until the 19th century (cf. J. Corominas, *Diccionario crítico etimológico de la lengua castellana*, Berne, 1954, s.v. *Arte*). Through French the word passed into English (cf. *The Oxford English*

Dictionary, I, Oxford, 1933, s.v. *Art*). German, on the other hand, which had in the word *Art* the etymological equivalent of the Latin, rendered the idea with another word, *die Kunst*.

German usage has an exceptional importance for us. It was on German soil that the successive meanings of τέχνη-*ars*-*Kunst* emerged, so to speak, from prehistory to enter into history. *Kunst* is an old verbal substantive; the "linguistic consciousness" of the 15th and 16th centuries was still aware of its connection with *können* (J. and W. Grimm, *Deutsches Wörterbuch*, V, Leipzig, 1873, s.v. *Kunst*). Its root (**gnō-*, which is also the root of the Greek γινώσκω and the Latin *cognosco*) and the connection with *können* (Old High German *kunnen*, Gothic *kunnan*) explain its original meaning of "shrewdness" (which survived until 1240) and its additional meaning of "knowledge-ability."

Thus *Kunst* could absorb the meaning both of medieval Latin *scientia* and of *ars*: indeed, by 1400 the Latin "septem artes liberales" was translated by "siben fryen kunste" (cf. Grimm, op. cit.). It soon absorbed all the Latin usages of *ars* and thus, indirectly, of τέχνη (J. Trier, *Mitteilungen des Universitäts-Bunds*, Marburg, 1931, p. 36 ff.; F. Kluge and A. Götze, *Etymologisches Wörterbuch der deutschen Sprache*, 6th ed., Berlin, 1953, s.vv. *Kunst* and *können*). Later *Kunst* tended to have a more specific usage, and a new one; from the 16th century onward it indicated less often a generic "trade" and instead the activity of artists in the modern sense of the word: e.g., of poets, painters, sculptors, musicians. Then appeared the term "figural art" ["nach der bildener Kunst" (sic) Grimm, op. cit., col. 2681], upon which Lessing later based a theory.

The final transition of *Kunst* from the idea of "trade," or *ars* in the Latin sense, to the modern meaning took place in the 18th century with Winckelmann, Lessing, Herder, and Goethe (Grimm, op. cit., col. 2682); thus from its very beginning the esthetics of German classical philosophy acquired one of its key terms.

With the diffusion of romanticism and of Kantian and idealistic philosophy in Europe, *Kunst*, which was used to denote "art" without further specification, influenced the terms in the Romance languages (and in English) that are related to the Latin *ars*. In spite of some opposition, the new usage prevailed everywhere, supported by some preromantic precedent. [For the purists' argument in Spain against the usage of *el arte* "fine arts," see J. Corominas, op. cit. In Italy it should be noted that N. Tommaseo, in his *Nuovo dizionario dei sinonimi della lingua italiana*, Naples, 1840 (s.vv. *Arte*, *Mestiere*, *Mestiere*, *Professione*, *Arte*, *Professione*, *Arte*, *Mestiere*) merely mentioned the new meaning of *arte* in passing.]

In the Italian linguistic tradition, as a precedent of the 19th-century and present meaning of *arte*, it is interesting to see the use made of it by Giambattista Vico — an almost isolated case in the Italian 18th century: "The first peoples, who were the children of mankind, founded first the world of arts; then the philosophers, who came much later, and were therefore the old men of the nations, founded the world of sciences; thus was mankind truly complete" (*La scienza nuova giusta l'edizione del 1744*, Bari, 1911, Ultimi corollari, 5). Vico, in other ways a representative of a conservative linguistic tradition, was an innovator as regards the usage of *arte*. In view of his peculiar position as an isolated forerunner in European culture, we have here the strongest evidence of a link between the new usage of *arte* and the preromantic and romantic world of ideas and tendencies.

However, the old meanings of *arte* as "trade" and as "practical activity" had not yet disappeared completely: not only had they survived in some idioms and proverbs, but they appeared in some shades of meaning of the new usage of the word. In modern esthetics, "art" and "poetry" are differentiated. In France, for example, we see the difference in meaning in Flaubert's distinction between *poète* and *artiste* (*Correspondance*, II, 81) and in Italy in the corresponding well-known distinction of Francesco De Sanctis, both due to the fact that "art" still conveyed the idea of an "operative and formative" activity (B. Croce, *La poesia*, 4th ed., Bari, 1946, p. 223). Thus from

the actual linguistic usages we pass on to the reflections and speculations suggested by them.

A distinction of degree between artistic activity, as an activity of the mind, and the technical activity of craftsmen began to appear only in the 15th century. Dante still called any worker in the field of art or handicraft an "artist"; but in the Quattrocento the artist was one who professed one of the "liberal" arts, while the craftsman, socially inferior, was one who practiced a "mechanical" art, although with a certain inventive, and even economic, independence which distinguished him from the ordinary workman. The separation of the intellectual from the artisan approach does not imply that the term "art" was abandoned, for this included both; but it gave rise to a distinction: the arts in which the intellectual ability is predominant were called "arts of design" (Vasari), while the others remained handicrafts (q.v.).

The word *disegno* (design, from the Latin *signare*, "to indicate") was used in the 14th century for the initial phase of pictorial representation. This phase probably became particularly important when narrative or dramatic content demanded invention rather than repetition of the traditional iconography; nevertheless, it was a technical phase inseparable from the succeeding ones (e.g., the sinopia of a fresco). But in Vasari's time this phase was detached as an ideal foreshadowing of beautiful or universal form above and beyond the individual arts with their different and particular techniques: "Sculpture and painting . . . are sisters, born from one father, which is design" (Vasari, *Lives*, translated by G. de Vere, London, 1912-15, I, pp. xxxiii-xxxiv). The concept of "arts of design" did not imply either a partition or a hierarchy of classes: arts "have no precedence one over the other, save inasmuch as the worth and the strength of those who maintain them make one craftsman surpass another, and not by reason of any difference or degree of nobility that is in truth to be found between them," and Cellini, for instance, tried to raise the goldsmith's craft to the level of invention or design. The flood of copies and derivations shows that in the absence of invention even technical expertness in painting, sculpture, or architecture can produce results below the level of handicraft. Still, it is the testimony of history that inventive activity is displayed more prominently in architecture, painting, and sculpture; and to the masters of these "major" arts Vasari dedicated his *Lives*.

From the idea that art has a speculative character and that it reveals in its form the beauty of nature is derived the further definition of "fine arts," which in fact covers the same area as the "arts of design" but establishes their purity and disinterest.

Borghini (*Il Riposo*, Florence, 1584, I, p. 48) intimated the disinterested character of art as against handicraft by stating that "art is specifically an intellectual habit which consists in doing with certain and true motive things which are not necessary; the principle whereof is not in that which is done, but in him who does it."

The term "fine arts," still used in academic and official terminology, is complex. "Art" implied both the idea and the execution, in the synthesis which the 15th century acknowledged and described as the specific process of art or "manner," while the adjective "fine" indicated the function, once more attributed to the artist, of representing the beauty of nature.

A more precise allusion to representation is found in the definition of *bildende Kunst* formulated by Lessing to distinguish sharply the figurative or plastic arts from poetry and to reduce their scope to the visible world. The Italian *arte figurativa*, "figurative art," based on that definition, also aims at distinguishing, however empirically, the arts which are realized in visible form from those, like poetry and music, which are realized in nonvisible forms but still fall within the sphere of esthetic activity. A whole century of reflection on the values and the possible categories of representation, and the analysis of vision carried out by artists during the 19th century, have led to a further revision of the term.

The modern phrase "visual art," if limited to the theory of art as pure capacity for being seen, obviously does not cover content; since art is no longer viewed as reproduction of a visible entity but as having a purely visual value, any distinction

of major and minor, pure and applied, arts is eliminated. However, the word "art" is still fundamental, in this phrase, to indicate that visual experience is certainly not the result of a passive sensory reception but is determined or conditioned by the forms produced by man, which rightfully enter into the world of phenomena or of reality.

Origins attributed to artistic creation. Granted that artistic activity is not peculiar to any one group of privileged individuals but is an essential element of the human mind, certain problems arise at once. What is the origin of that activity? Is it innate or is it the product of a historical development? What is the relationship between the specific activity of the artist and those esthetic interests or activities which do not lead to works of art?

In answer to the first question, modern psychologists (see PSYCHOLOGY OF ART) have thoroughly investigated children's drawings, aiming chiefly at discovering the relationship between these and the "psychological types." A predominant theory is that the first drawings belong to an initial evolutionary phase of total "integration" of the individual with the outside world, and that this phase, under the conditioning effect of the environment, is followed by another, of "disintegration," in which the child discriminates between his perceptions and his intellectual activity (H. Read, *Education Through Art*, London, 1943).

It is, however, easy to observe that (1) apart from the question of an atavistic esthetic experience, the first graphic endeavors of the child belong to an age when he is already strongly influenced by environment; (2) while it is certainly true that the child tends to express himself by images, there is no evidence that the development of the mind or of abstract thought suppresses the original esthetic impulse (indeed, it is well known that imagination accompanies even the highest forms of thought); (3) the very psychology of perception and form demonstrates that perception is not a given factor, taken directly from external reality, but a complex act, the result of a whole series of conditioning factors.

It is quite fruitless, moreover, to try to establish a connection between children's graphic and plastic expressions and specifically artistic productions, since the latter are closely related to those very intellectual and cultural activities which are supposed to repress the natural artistic impulse. On the other hand, the more recent trends in pedagogy emphasize the need for an esthetic education in childhood, admitting that this education must rely on the specific techniques of art and that its aim is not so much to preserve an innate esthetic attitude as to develop the ability to obtain concrete results by an appropriate technique (see EDUCATION AND ART TEACHING).

The esthetic activity of children has been likened to that of the primitive cultures of today, in which Jaensch and others recognize the same "integrated" phase. This analogy, however, is based on negative evidence, such as ignorance of perspective and anatomy (or, possibly, a lack of interest in these), rather than on a positive identity of meaning of the signs used, i.e., of the modes of experience and expression. Furthermore, while children's drawings show their spontaneity by their very contradiction of the adult methods and expressions of the society, primitive art, on the contrary, is obviously related to the technical and productive development of its culture.

Historical research on the origin of artistic activity has involved works of art going back to relatively remote stages of the Upper Paleolithic age (between 40,000 and 13,000 years ago); but it has had to recognize in every case their relation to a certain social organization and a degree of technical development (see PREHISTORY). Paleolithic figures, sometimes taken as evidence of a spontaneous representation of nature, had in all likelihood a magical or religious meaning and a propitiatory purpose, indicating that paleolithic man depended on belief in a supernatural world, and the spread of such a belief proves the existence of a social organization as well as a degree of culture.

Later we find an antithesis of naturalism vs. schematism — the representational vs. the abstract-geometric — as either successive or contemporary phenomena. These can certainly express two different technical modes, the first a ready adapta-

tion and almost an improvisation, the second an organized planning and execution; but the first no less than the second suggests that artistic activity has a place of its own in any complex of activities with well-defined aims.

Popular artistic expressions have also been taken as evidence of the instinctive or spontaneous nature of art (see *FOLK ART*); but here again, research has led to the opposite conclusion, for it has proved that art is always the product of an organized society. The 19th century abandoned the prejudice which considered the lower classes of society as irrelevant to culture and maintained that in their artistic expressions they depended on the main centers and the major trends of artistic culture; there arose then a strong interest in the artistic productions of those who, being farthest removed from such trends and centers, might be viewed as naïve or spontaneous.

Even today one may refer to buildings in the Alps, in the country, or in some areas of the Mediterranean as "spontaneous" architecture, and certain handicraft products such as utensils, furnishings, implements, fabrics, and embroidery are regarded as artistic. But it should be noted that in this case the spontaneity is attributed not to the individual but to the community, since popular art is regarded as an anonymous and collective expression of the traditions, customs, beliefs, and feelings of the community.

Provincial and popular art (see *PROVINCIAL STYLES*) is fully a part of artistic culture, not merely a secondary branch of it; indeed, at times it can be so vigorous as to overrun the art production of the major cultural centers and change its course. This was proved by A. Riegl with regard to the late Roman art culture (A. Riegl, *Die spätromische Kunstindustrie*, Vienna, 1901) and the handing down of ornamental modes (A. Riegl, *Stilfragen*, Berlin, 1893).

It is therefore impossible today to admit a theoretical distinction between the art of the main cultural stream, on the one hand, oriented around the works of the major recognized artists, and, on the other, the art which expresses a collective "ethos" (*Volkgeist*) and is the result of a "spiritual and voluntary principle" (*Kunstwollen*).

This psychological-genetic conception of artistic development, which replaces the traditional dogmatic-esthetic conception (J. von Schlosser, *Die Wiener Schule der Kunstgeschichte*, Innsbruck, 1934, essay on Riegl), offers a preliminary solution to the problem of the relation between the works of the great masters and the artistic activity that is found on all levels of culture and production. In fact, it suggests the possibility of more discriminating judgment, instead of the arbitrary distinction between art and non-art adopted in some criticism. Thus it restores to an esthetic level the whole range of handicraft and industrial products and recognizes the existence of an art work wherever ideological content is expressed or visualized in a definite and significant image, irrespective of the depth or complexity of that content.

As it is impossible to postulate an autonomous and primary genesis of art resulting from an innate esthetic impulse, research into the origins of artistic activity has been shifted to the factors which determine it. Such factors have been sought sometimes in deep-rooted or "structural" attitudes or inclinations of large social groups (Kaschnitz's "structure" theory), giving rise to the definition of "constants" (racial, national, etc.). These factors, however, must always be reduced from supra-historical abstractions to the historical concreteness of cultural remains or of stable or slowly evolving traditions. Along with this search for remote determining factors is a search for more immediate factors. These may be the great religious, moral, or political ideals, thus identifying the history of art with the history of spiritual development (M. Dvořák, *Kunstgeschichte als Geistesgeschichte*, Munich, 1928); or they may be the great events of civic history (Taine); or, to take a more sociological view, they may be social and economic conditions (Hauser, Antal, etc.).

If we assume that artistic creation has its origin solely in historical factors, the question remains whether that creation should be judged merely as a response to the events that have determined it — in other words, whether the determination and the purpose of art are one and the same thing.

Practical and esthetic purpose. In the whole range of artistic phenomena, no object seems to have been conceived and realized with the sole and exclusive purpose of being a work of art. Without discussing the general question of the relationship between art and usefulness (see *ESTHETICS*), but confining our study to the actual phenomena, it is easy to see that art values are closely connected with all aspects of social life and with related modes of behavior and techniques: with religious ritual, with religious belief (see *DEVOTIONAL OBJECTS*); with the cult of the dead (see *ESCHATOLOGY*); with the publicity given to religious, moral, and civic ideals and even to commercial products (see *PUBLICITY AND ADVERTISING*), with the performance of public ceremonies (see *CHOROGRAPHY*); with scientific and cultural interests (see *PERSPECTIVE*; *HUMAN FIGURE*; *ZOOMORPHIC AND PLANT REPRESENTATIONS*; *ASTRONOMY AND ASTROLOGY*; *CONMOLOGY AND CARTOGRAPHY*); with social interests and costume (see *CHARACTERIZATION*; *COSTUME*); with the theater (see *SCENOGRAPHY*); with the practical necessities of the home (see *STRUCTURAL TYPES AND METHODS*; *FURNITURE*); with work (see *HOUSEHOLD OBJECTS*; *UTENSILS AND TOOLS*); transportation (see *VEHICLES*), and entertainment (see *GAMES AND TOYS*).

This relation exists even with regard to products with no immediate practical purpose. Indeed, one could not name, in the whole history of art, a single painting or sculpture (to take the two categories that are apparently farthest from a practical purpose) which does not aim at arousing religious or civic feeling, or at influencing the emotional sensitivity of the onlooker, or at decorating a room.

Even if art is considered, as it was toward the end of the 19th century, to have its purpose in itself ("art for art's sake") and therefore to aim merely at achieving esthetic value, it is plain that esthetic value, like moral or intellectual value, is necessary to the life of society and must therefore be fostered by art. Art thus takes on an educational function paralleling its earlier service to religion, politics, or science.

According to another preconceived idea, although the object has a practical purpose which conditions its whole fundamental structure and shape, other shapes are superimposed on this. These are obviously not necessary to the function of the object and thus have a decorative or ornamental nature.

No action or function can ever be reduced to its bare mechanics: a building is certainly a shelter from external elements, but it also becomes representative of religious or civic ideals, or it may denote a privileged position of the individual or the family in the community; clothes, which are originally a protection against the cold, eventually come to indicate a social or a religious status; eating and drinking are a physiological necessity, but they can become a symbol of hospitality or acquire a sacrificial or a propitiatory meaning in religious ritual. But these functions, which are gradually added to the original purpose, are also of a practical nature. The only difference is that they have a broader significance, which may be extended to include the whole pattern of human relationships, thus taking on a universal meaning.

It is therefore understandable that the shape of the object as an instrument for action and as visible proof of its importance, should trace the development and interrelation of the various functions and gradually acquire, like the action itself, a value which is no longer particular or individual, but general and universal. As Dewey has pointed out (*Art as Experience*, New York, 1934), art is not related so much to the mechanics of single functions as to the functional organization of society as a whole.

It has frequently been argued that art should abandon these added or symbolic functions and confine itself to mere pragmatic ones. But this argument appears to be concerned not so much with art as with the habits, or indeed the moral foundations, of society. Thus, when St. Bernard urges that a church should fulfill merely its religious functions, his purpose is actually to condemn a ritual which he sees as a distortion of true religion. And when Le Corbusier insists that architectural form should be dictated by the needs of daily life, his appeal is aimed not so much at reasserting the value of the mechanical against the symbolical function as at doing away

with symbols that he considers antiquated and meaningless and wants to replace by practical function, which in turn becomes a symbol of new values.

However, it should be noted that both St. Bernard and Le Corbusier advocate a reform, maintaining that invalid and conventional functions should be abandoned in favor of authentic and contemporary ones; from this we infer that only by adhering to the latter (i.e., to the advance of history) can the artist create forms of genuine value.

The need of relating art forms to function, either as a whole or in the construction phase (see C. Brandi, *Elizante o dell'Architettura*, Turin, 1956, p. 120 ff.), transfers the problem of purpose from the final form to the process followed. In other words, when the artist is in the process of producing an object, is his purpose merely to produce something that will fulfill a given practical function, or is it also to achieve a specific art value? Is there a technique or a technical process which is peculiar to art, or can any technique lead, or fail to lead, to artistic results? In the first case, what will be the relation between the technique peculiar to art (or the process commonly called "style") and the technique of ordinary production? In the second case, what might be the nontechnical factor which, given two objects produced with the same technique, causes one to be considered artistic and not the other?

Although every object created with an artistic intention fulfills a practical function, either individual or collective, it is plain that artistic value is not related to the degree in which the object fulfills that function, nor is it limited by the function. An esthetic value is recognized even in works whose practical or representative function has long been forgotten. Every age, every civilization, has formulated different judgments on usefulness and beauty. This distinction between function and value, and the fact that the latter outlasts the former, is intuitively understood by the artist. Hence the inference that the artistic object, although belonging to a group of products not all of which are artistic, is the result of a process which is deemed better than others or, indeed, the best, but with a superiority not only of degree but also of quality.

It would, however, be a mistake to identify a priori this difference from the normal modes of operation with the invention and introduction of new technical factors. In a history of technical progress, artistic phenomena can be found at the beginning, during, and even at the end of the succeeding phases; and in the historical development of artistic culture, the great innovations in form are not necessarily related to the great technical discoveries.

It is certainly possible to trace this distinction in a number of objective facts (e.g., the way of treating color or the greater delicacy and sensitivity of relief); still, it cannot be explained by the use of certain modes and processes, but only by a different behavior of the creator. As Borghini noted, the principle of art "is not in that which is done, but in him who does it."

Therefore the distinctions between architecture (q.v.) and building, between art and applied art, between creative and repetitive or academic work — corresponding to Croce's distinction between poetry and prose — do not imply a distinction of techniques but one of behavior within a given technique; and they can, in fact, be summed up in the distinction between "quality" and "quantity."

However, although economic production aims at quantity, and artistic production at quality, the notions of quality and quantity can be defined only by relating one to the other.

This explains why a work of art is always considered unique, an original that cannot be reproduced; and why, in spite of this, there is a constant tendency to reproduce it, to copy it, i.e., to absorb it in the channels of production, although it is well known that reproduction, by its quantitative nature, retains only a shadow of the qualitative value of the original. (This does not apply to copies made from a pattern designed to be reproduced identically, for the pattern is still original although several copies exist.)

For the same reason the first criterion for the recognition of a work of art is authenticity — which refers not merely

to its age or to the fact that it is signed but to its formal quality. Thus a work which is unquestionably by the hand of a great master may be said in terms of art criticism to be "unoriginal" if it repeats forms or modes realized in earlier works; i.e., if it results from a mechanical process, whether intellectual or technical.

In productive activities and techniques, the artist's activity has historically been considered to belong to one of two categories: either it is entirely absorbed in the field of production, but production raised to the height of perfection; or it is detached from production and related to a world of ideal values (religious, intellectual, political) which constitute the basis of the whole society and condition all its functions.

From the first concept derive technological manuals such as the medieval treatises by Isidore of Seville, Vincent of Beauvais, and Heraclius. These authors merely theorize on the ideal conditions of a given process; thus they admit that human action cannot reach beyond a certain point — beauty can be achieved only with the help of God's grace.

The second view, which considers art a representation of universal concepts, does not explore so much the modes of operation as the modes of vision and representation. It thus establishes categories of purely artistic values, related, explicitly or implicitly, to the idea of beauty. Such values can be extended to utilitarian production only by deduction or secondary application. Among these categories are the canons of proportion of classical art, of Indian art, and of the Renaissance (see PROPORTION) and the theories on representation of nature (see PERSPECTIVE) or of human actions (see HUMAN FIGURE).

From this there emerges the idea of a procedure, if not an actual technique, aimed exclusively at producing artistic representation, or artistic form, which can be appraised only as an absolute quality: design (q.v.). Thus design, as the root or origin of all the arts or as an intellectual technique which comprises all the lesser technical specifications, presupposes a practical experience in all the techniques in works of art.

Thus the idea of design, or art-invention, is inextricably connected with the idea that art is basically historical. This is, indeed, the great legacy of the Renaissance to modern cathetics: art is invention or creation, in that it always breaks away from custom or mechanical operation, but it can be such only in so far as it implies a thorough experience of the past. Art must therefore justify itself in relation to the past by relating itself to those events which stand out as creative in the eyes of the artist. Hence the historical consciousness of the early Renaissance artists required them to break loose from recent tradition, which they saw as mere technical skill, and to establish a direct link with classical art, to them an expression of knowledge and wisdom.

This view of art as representation, together with the development of a specific technique of representation on one hand and, on the other, the social advance of the artist from the rank of craftsman to that of intellectual, gave rise to an autonomous artistic culture, based on the theory and history of formal representation.

Art is thus considered both determined and determining: determined, because it expresses the ideals of the civilization in which it operates; determining, because those very ideals would remain partly unexpressed and inactive (and would therefore lose their universal value) if art did not give them esthetic form. The immediate purpose of art is therefore to achieve esthetic values and to build and develop a specifically artistic culture, but only in so far as those values and that culture are acknowledged as having a necessary function in the general pattern of society.

The inference, then, is that the purpose of art is art itself, or, more precisely, that art aims at determining values which (in relation to the cultural conditions of the artist's environment) will be considered artistic — i.e., will have a definite place in the historical development of art and will promote its further development. It may be inferred also that this inherent purpose does not exclude — rather, it implies — a wider purpose of art in the general pattern of human activities.

PROBLEMS OF REPRESENTATION. Methods of classification. It is pointless to try to find the origin of artistic culture, or of any culture, as if it could be traced in extrinsic motives; but inquiry into the structure and the modes of development is legitimate. The first step in objectifying that structure and investigating the modes of development of artistic culture is the attempt to classify its phenomena. There are, of course, purely empirical methods of classification, mere nomenclatures, which do not distinguish artistic activity from ordinary trades. These methods are generally based on differences in materials (e.g., ceramics, goldsmith's work, cabinetwork), or in processes (e.g., painting, carving, weaving), or in the objects produced (e.g., furniture, tapestry). See ARMS AND ARMOR; BASKETRY; CERAMICS; COINS AND MEDALS; ENAMELS; ENGRAVINGS AND OTHER PRINT MEDIA; FEATHERWORK; FURNITURE; GEMS AND GLYPTICS; GLASS; GOLD- AND SILVERWORK; HOUSEHOLD OBJECTS; INDUSTRIAL DESIGN; INLAY; IVORY AND BONE CARVING; LACQUER; LITURGICAL OBJECTS; METALWORK; MINIATURES AND ILLUMINATION; MOSAICS; MUSICAL INSTRUMENTS; PAINTING; REPRODUCTIONS; SEALS; STAINED GLASS; STUCCO; TAPA; TAPESTRY AND CARPETS; TEXTILES, EMBROIDERY, AND LACE; SCIENTIFIC INSTRUMENTS AND APPLICATIONS; UTENSILS AND TOOLS; VEHICLES. Such terms as "architecture," since they do not refer either to a definite material or to a specific technique, seem to involve processes on a higher level, which includes diverse kinds of techniques; "painting," particularly in the sense of the Greek term *γραφική*, implies an analogy or affinity not only with the process of writing but also with its intellectual aspect, indicating the nature and purpose of painting in the delineation and creation of images. (In the Far East, painting is part of calligraphy and thus is directly related to historiography and poetry.)

Every attempt to classify the arts assumes the preeminence of one activity over others and thus only establishes a hierarchy. In Greek philosophy the first demarcation of the field of visual art occurs in relation to poetry and music: these are distinguished from visual art by the absence of that manual character (*βαρυστία*) which is inseparable from the plastic arts.

While this distinction is obvious in Plato, the hypothesis that the missing part of Aristotle's *Poetics* contained a treatise on the plastic arts cannot be sustained. Still it is clear, from many indications and references, that both Plato and Aristotle were aware of the arts that flourished around them and of the problems they presented to philosophy. Although the *Poetics* of Aristotle did not go beyond the problems of poetry, nevertheless it propounded, by extension or by analogy, the problem of figurative representation and started the series of theories concerned with it.

The concept of imitation (see *MIMESIS*) offers further basis for the distinction between art and craft. Whether imitation is considered a gratuitous act or a necessary and creative one (see *ESTHETICS; MIMESIS*), it falls outside the range of immediate utility; therefore either we deny art all value, or we recognize that art is an end in itself, and when it happens to fulfill other aims, it can do so only if it has already achieved its artistic purpose by a successful imitation (in the sense of Aristotle's cathartic *mimesis*).

From this point on the classification of the phenomena of art becomes a classification of the categories of form or of the modes of representation. This fact involves a distinction, *de facto* if not theoretical, between activities leading to formal representation and those leading purely to the production of objects. Although this is a tacit distinction in the literature, it is shown quite clearly by the fact that both history and philosophy devote attention to the visual arts, by the importance attributed to them in the education of "free men" (Pliny, *Naturalis Historia*, XXX, 76, quoting a Greek source of the 4th cent. B.C.; Plutarch, *Aemilius*, 6), by the social status enjoyed by artists, and by the schools established and run by the best masters and attended by noble pupils since the 4th century B.C.

It is true that this distinction seems to disappear altogether during the Middle Ages, but not because the higher forms of art regress to mere manual skill — rather because a high esthetic culture recognizes in all objects produced by the hand of man a dual quality of knowledge and action ["*ars duplex, una in scientia, alia in actu*" (Gaius Marius Victorinus, Commem-

tary to Cicero's *De Inventione*, ed. C. Halm in *Rhetores Latini Minores*, Leipzig, 1863, p. 219)]. This obviously prevents any distinction by categories, since in any series of objects some approach perfection and others fall short of it.

During the Middle Ages both the West and the Islamic world were vaguely aware of a distinction based on classes of value, no longer depending on the skill of the worker; but it was formulated and theorized only by the humanists, with a clear-cut distinction between the cognitive, or inventive, activity, which was placed on a level with the sciences ("*artes liberales*"), and the "mechanical" one, which consisted in repeating traditional techniques. This distinction corresponds to the modern division between major arts (architecture, painting, and sculpture) and minor, or applied, arts (handicrafts and industry), i.e., between arts that elaborate an original esthetic experience and arts that confine themselves to producing material objects, depending more or less directly on the former. But even this division is challenged, in theory, by the latest esthetic doctrines, and concretely by the developments of contemporary art.

The concept that imitation was the beginning of art created a serious difficulty regarding architecture, since this requires a "science" superior to that needed for any other art, yet produces material objects of practical use and cannot be reduced to the level of imitation (although some have tried to see an imitation of nature in its formal systems and elements).

Vitruvius (q.v.), who draws from Greek sources, shows how ancient is the need to formulate a special theory of art for architecture — one distinct from the imitation theory, yet able to define the value of form according to a criterion not limited to the fulfillment of practical needs. The very fact that Vitruvius sets "*scaenographia*" as the terminal phase of the "*dispositio*," or plan ("*frontis et laterum abscedentium adumbratio, ad circinque centrum omnium linearum responsus*," I, 2) shows that the form of a building should be conceived as integrated in a definite space, pervaded by light, and surrounded by the atmosphere. It should therefore be judged with regard to the meaning or value of its visible form, like a painting or a statue.

The same considerations apply to eurhythm and symmetry: although these can be judged in relation to the visual pleasure they produce, their real value depends on the degree to which they conform to the laws, or proportions, of nature or of the human body (Vitruvius, loc. cit.).

In the Indian and Far Eastern cultures, and in Western culture during the Middle Ages, architectural form was thought of as representing — if not imitating — universal concepts or values, expressed by symbols and allegories. The Renaissance, on the contrary, maintained that architectural form represents a space which is objectively certain and built according to mathematical laws. Architecture is, then, the representation, not of the external aspects, but of the inner and constant structures of the world of reality.

On this basis the 18th and 19th centuries were to formulate a particular esthetics of architecture as distinct from the other arts and superior to them, owing to its essentially speculative nature. Even the modern theory, that architecture should aim purely at fulfilling practical functions, is not at variance with the unchanging thesis of its representative nature. Rather, such functions are seen as a realization of the actual and authentic spiritual values of modern society that set the dimensions of human life.

If architecture does not form a separate class in the history of artistic cultures but is distinguished and set above the other arts, then the whole realm of the arts must be classified by value; and obviously the value is always in relation to the effectiveness of the representation. Such a value cannot be attributed to the work of art as long as things are only *signes* of God, as they were in the Middle Ages (E. de Bruyne, *Etudes d'Esthétique Médiévale*, Bruges, 1946, I, p. 369); but it becomes fundamental when man begins to attribute a concrete existence and a precise meaning to natural things. Thus at the beginning of the 16th century, critics discussed whether first place should be given to sculpture (q.v.), which achieves figure relief tangibly, or to painting (q.v.), which, although limited to a flat surface, by modulating colors can represent not only relief but full

reality with a greater depth and mobility, by this means recording natural likenesses in their changing nature as well as the movements of the human body and, through these, the soul.

Michelangelo held that sculpture should take precedence, arguing that sculpture is done by "removing," whereas painting is done by "adding." Although this argument is based on analysis of the technical process, actually it is the ideal rather than the manual process which Michelangelo considered, since the "removing" or destruction of matter is the means of liberating its opposite, the "idea."

Conversely, yet for the same reason, in the Far East, painting, with its rarefied substance and its sole purpose of evoking an image, is placed above sculpture, which is considered a handicraft because it acts directly and almost violently on matter.

From the 17th century onward, and not only in the West, painting is generally considered the art which most effectively fulfills the purpose of representation and is therefore best suited to exploring both the external reality and the conditions under which it is ascertained and represented. Thus it can interpret not only visual perceptions and sensations but also the mind of the artist, who with his passions and interest can eventually alter the sensory data.

Within the now-established class of the major, or representative, arts (painting, sculpture, and architecture), further distinctions are formulated according to the kinds of representation: thus, for example, architecture may be classified as religious, civil, and military; sculpture as sacred, portrait, ornamental; painting as historical-religious, portrait, decorative, landscape, genre, etc. Each of these categories is then further divided into species and subspecies. In landscape there are the "heroic," views of ruins, perspectives, fantasies, etc. In figure painting we have the nude, single or group portraits, allegorical compositions, etc. In still life there are flowers, musical instruments, tables of food, etc.

Such distinctions, when they are not merely the result of a specialized craftsmanship, evidently derive from a conception of themes (q.v.) that implies a multiplicity of rudimentary but identifiable philosophies of art (q.v.). These aim at classifying the emotional reactions of both the artist and the onlooker before a reality which can no longer be apprehended in its entirety but only in its particular aspects.

Modern esthetic thought, holding any classification of artistic phenomena to be purely empirical, confines itself to studying the successive categorical divisions under the historical aspect; that is to say, it considers such divisions as an endeavor to clarify the esthetic experience and the artistic activity related to it. On the other hand, art history (see HISTORIOGRAPHY) employs in its research historical divisions and classifications founded on chronology and on the geographic distribution of art centers and their interrelations.

Cato's condemnation of art, in defense of the austerity of Roman customs and traditions, implies a historical judgment: art is something foreign, pertaining to another culture, the Greek. In different terms this argument appears once more in the Middle Ages, when Gregory the Great opposes to the "Greek" thesis of the iconoclasts the "Latin" thesis that the "historical" representation of events from the New Testament and the lives of the saints is not sacred but serves an educational purpose. The same antithesis of "Greek" and "Latin" reappears in the late 14th and early 15th centuries and is then identified with the antithesis of "ancient" and "modern": the rigid Byzantine icon is Greek, or ancient, whereas the art beginning with Nicola Pisano and Giotto is Latin, or modern. Later, when classic art is taken as an ideal, the word "ancient" acquires a positive meaning, and "modern" — which by then means Gothic, generalized in its turn as "German," in contrast to the traditional Latin art — acquires a negative one.

Accentuation of the combined historical and inventive character of art, focusing attention on the great creative personalities and their sphere of influence, sets a value on the phases of development and the relations of cultural currents; the "school" then becomes the criterion for classification. This word, used for the first time by Michele Savonarola (*Libellus de magnificis ornamentis regiae civitatis Patavii*, 1440, in L. A. Muratori,

Rerum italicarum scriptores, XXIV, p. 1137 ff.) to indicate Giotto's followers in Padua, and only rarely used by Vasari, is freely applied by A. Félibien (*Entretiens sur les vies et les ouvrages des plus excellents Peintres, anciens et modernes*, Paris, 1666–88) in the first historical study of the art of the 16th and 17th centuries. In all the works of the 18th-century art historians we find increasingly subtle distinctions between national, regional, and local schools: as in d'Argenville (*Abrégé de la vie des plus fameux peintres*, Paris, 1745–52) and, with regard to the Italian schools, in Lanzi (*Storia pittorica dell'Italia*, Bassano, 1795–96).

An attempt to divide the whole of Western art, both ancient and modern, into main periods was made by Winckelmann (*Geschichte der Kunst des Altertums*, Dresden, 1763). However, Winckelmann's criterion was ideological rather than historical, and he substituted for the idea of "school," indicating an actual transmittal of experience from master to pupil, the concept of "style," by which he meant each of the great cultural cycles following one another with a constant rhythm of origin–progress–peak–change–decadence.

With Hegel (*Vorlesungen über die Aesthetik*, Werke, X, Berlin, 1835–38) the problem of dividing art into definite periods shifted from the plane of history to that of general esthetics, and he conceived the three major arts as the typical expressions of the three main stages or degrees of art: the "symbolic" (architecture), the "classical" (sculpture), and the "romantic" (painting).

In the 19th century, art historians adopted various criteria of classification. While the connoisseurs and research workers, from Morelli and Cavalcaselle to Berenson and Adolfo Venturi, proceeded to refine the historical concept of the "school" to the point of subtly distinguishing between the master's own hand and his workshop, critics of a positivist bent, refusing a priori any distinction in principle between spiritual and manual aspects, reconsidered once again all the vast material available in the field of decorative and applied art. They classified according to formal characteristics and thus arrived at a division into "styles," a system now almost completely rejected. On the other hand, because a desire for minute analysis and for the *catalogue raisonné* was accompanied by need for a broader view of the history of art, attuned to the history of civilization, we find in this period attempts to classify on a vast scale. Phenomena not strictly bound together historically are linked to one another as common expressions of the ideals of an epoch; hence the use of such descriptive terms as "archaic," "classical," "Romanesque," "Gothic," "Renaissance," "mannerist," "baroque," "neoclassical," "romantic," etc. Such divisions — and all the various forms of art expression embraced by them — were then further broken down into narrower classifications, and in each division an attempt was made to define an initial phase (early medieval, early Renaissance), a phase of full maturity, and a late phase (late antique, late Gothic).

The critics whose criterion was "pure visibility," on the other hand, attempted to classify according to certain visual constants, each of which may prevail in a given period only to disappear in the next (for example, line, mass, surface, open or closed form; pictorial or plastic value; static or dynamic quality). Their work furnished useful instruments of interpretation but did not supply a true criterion for classifying artistic phenomena, first because each constant can be defined only in terms of its dialectical antithesis, and second because each visual category may include works of the most varied periods, cultures, and techniques.

Contemporary art, in the majority of cases, contains in itself the prerequisites for a provisional classification of its phenomena. The expressed intentions of artists united into groups with explicitly formulated programs and openly declared tendencies furnish a preliminary criterion for classification; hence the schools described by such names as "cubism," "expressionism," "surrealism," and others.

Materials and techniques. Granted that art, like all other human activities, is an attempt to come to terms with reality, it follows that the first aspect of this reality with which the artist is confronted is the material on which he is going to work. Of course, there are works of art of which it is said

that they enhance the value of the material employed, and there are others which so transcend that value that the material becomes a mere vehicle for art. Obviously this distinction is not a critical criterion, although it may serve on occasion to explain the intentions and the techniques of artists of particular cultures as compared to others. There are no materials which can be said to be more suited than others to the attainment of artistic aims, just as there are none which are a priori unsuitable. The value of each material lies only in the fact that it is selected; and if some are selected more frequently than others, this is owing not so much to their intrinsic qualities as to the continuation of traditional techniques. Furthermore, since the choice of the material is the first step in the artistic process and implies a definite idea of the desired formal result, it is clear that the problem of the material cannot be separated from the problem of technique. And the fact that a particular form can subsequently be transferred from its original material to another (though often with inferior results) merely proves that the form itself has a universal value over and above the particular value of the material used.

Since artistic activity occurs within the social world and its productive cycles, the material for a work of art is not necessarily in its original or natural state; actually, being the result of a choice, it is seldom so. And not only does the artist use preselected materials, which often have been subjected to preliminary treatment to adapt them to the esthetic purpose (see *TECHNIQUES*), but also he makes use of artificial materials (glass, enamel, cement, etc.), industrial products, or natural objects such as pearls, precious stones, shells, or bird feathers (see *FEATHERWORK*); or, in the case of landscape gardening, trees, rocks, and brooks (see *LANDSCAPE ARCHITECTURE*). Even other works of art, such as antique gems or miniatures, can be employed as materials (see *GOLD- AND SILVERWORK*).

It should be clear, then, that (1) at the origin of all artistic efforts there is an act of choice applied to a quantity of material, more or less rough or refined — a choice influenced by practical considerations such as greater resistance, durability, accessibility, and cost, and sometimes by the special characteristics of certain materials that are considered noble and precious in themselves, such as silk and jade in China; (2) the artistic effort aims at enhancing the value of the material, or, in extreme cases, at creating a value from nothing; (3) since man is at the highest level in the hierarchy of creation, the development and transformation of material by human activity appears as the continuation of the creative process, or, within the limitations of human weakness, a reiteration of the divine gesture of creation.

Often the work of the artist imparts the value of a precious material, even at times by imitating a more valuable material (for instance, when ceramics take the place of and to an extent resemble gold and silver, as in the Islamic world, where this is done in conformity with religious prescriptions). In fact, in modern times painting has been considered highly productive of wealth because it attains the highest prices with a minimum of material cost, its entire value arising from the work of the artist and not from the material used (John Richardson, *The Connoisseur*, London, 1719).

Granted that the material is inseparable from the technique, it is also necessary to point out the unitary character of the technique itself, for it is impossible to distinguish a technical or manual phase from a final stylistic one, which alone would give the object its artistic value. Clearly, all the various phases of the production (even, in painting, the choice and preparation of the foundation) postulate a prefiguration of the final result, at first generic but becoming ever more distinct and concrete. Even the preparatory activities (for example, the preliminary pointing of marble), which are often entrusted to assistants, are subsequent to the conception of the work in the mind of the artist. Each work of art has, therefore, an absolute value as a finished object, not only as material subjected to craftsmanship, but also in relation to the facts or objects of reality that it may represent or interpret. This integral validity of a work of art has long been recognized in architecture, where formal and structural processes are obviously inseparable, and is now admitted for all forms of art. This tendency is confirmed

by the modern conception of restoration (q.v.), which aims at preserving and reconstituting the material integrity of the work as well as the image.

The technical procedure can be displayed to a point of virtuosity or disguised in order to give an illusion of spontaneity. The former occurs more often in the work of craftsmen, where execution is the paramount factor, while the second prevails in works dominated by the creative impulse (hence the frequent superiority of sketches and preliminary models over the finished work). The apparent spontaneity and immediacy, which imply a mature experience, are generally considered to be a product of superior skill and, indeed, of a more exacting and refined virtuosity ("ars est celare artem"). This is further evidence that the artistic process, although it can always be reduced to a matter of technique, is never something merely learned and repeated mechanically but is rather a transcending of a particular procedure in a way that commits the whole personality of the artist, not just his intellectual and executive faculties. Further, the artistic process can become spiritualized only in so far as it departs from a mere elaboration of material to become a mental activity which governs manual operations — in other words, when it is conceived as *design*, or as a process or method of ideation.

The thesis that artistic activity is inspired or spiritual, that it is the result of a quickened inner rhythm, or "furor," originated in the Platonism of Ficino; it was then formulated by Leonardo in his writings and was later taken up and restated by Lomazzo: "The painter should take brush in hand only when he feels excited by a natural passion" (*Trattato dell'Arte della Pittura*, Milano, 1584, VI, chap. LXV; Rome, 1844, II, pp. 464-65). This theme was to be expanded later by Boschini, but only in reference to vehemence in the creation of painting; by the French theorists, who supported Rubens against the classicism of Poussain; by the English theorists of the "picturesque"; and finally, by the French 19th-century critics. Thus the artistic process is not dependent on an a priori ideation, nor does the praxis (which for Caravaggio took precedence over doctrine) depend on a preformulated "theory"; ideation is replaced by inspiration, which arises during the fervor of activity and directs and conditions it at every moment.

Today, on the contrary, both critics and artists tend to intellectualize the praxis and synthesize ideation and execution into an operative method, or a kind of continuous ideation, which covers all the stages of execution and solves all the problems presented by it (see *DESIGN*; *INDUSTRIAL DESIGN*).

Ornamentation. The relationship of art to reality is generally seen as a question of the representation of objects and aspects of nature; analogical imitation is, however, but one particular aspect of the general problem of art, even though it is of considerable importance. Equally significant, and perhaps historically of earlier date than analogical representation, is the use of ornament to improve and embellish the object.

Where the object is the human body, its appearance is altered by painted markings or tattooing, mutilations or voluntary deformations, hair styles, clothing, or jewelry (see *COSTUME*). It is clear, however, that this "improvement" is always aimed at making the human body, at least in appearance, more suited to a particular function; as with the masks and terrifying war paint used by the warriors of some primitive peoples to instill fear into their enemies, or the armor found in more advanced civilizations (see *ARMS AND ARMOR*). Both these devices transform the human figure and make it better equipped for war. Sometimes such markings merely emphasize certain limbs or features, by distorting them, as if superimposing on the individual an idealized image of himself or of a more powerful person (see *MASKS*); but they often have a symbolic nature, and their function is essentially that of imparting a kind of power or dedication to the wearer, rather than creating an emotional reaction in the onlooker. Heraldic and emblematic symbols and badges may have a similar meaning of dedication and authority, or they may be merely a means of recognition for members of the same family, religious sect, national army, or the like (see *EMBLEMS AND INSIGNIA*).

In the same way the presence of symbolic motifs on objects otherwise identical with or similar to those in everyday use indicates that these are designed for the symbolic transfiguration of some routine activity (for instance, drinking and eating transformed into sacrificial rites; dress converted into an emblem of public office or a sacred robe). In this sense many figurative motifs of ornamentation can be explained in terms of ceremonial or ritual requirements (see LITURGICAL OBJECTS). It is, then, easy to understand how, by the constant repetition of ceremonial acts in the family or the community, these motifs often outlive their specific symbolic meaning, thus becoming part of an ever wider repertory of ornamental subjects.

It frequently happens also that forms originally created for purely functional reasons outlast their primitive purpose and persist as pure ornamentation, although they are still valid reminders of the function that dictated their shape. We have an example of this process in the fluting of marble columns in Greek temples; in the original wooden buildings, such grooves had served as gutters.

The same is true when the ornamental motifs assume a naturalistic character, that is, when they are composed of human figures, mythological or narrative scenes, landscapes, or animals or plants (see ZOOMORPHIC AND PLANT REPRESENTATIONS). Such representations may have been, at least in their origin, more or less directly connected with the purpose of the object; or by distracting the attention from the object's specific or mechanical function, and relating it to something different and apart, they gave it a more general meaning and a closer connection with living reality. Ornamentation (q.v.), whether achieved by the use of figural elements, of abstract patterns, or of simple polishing, scraping, or coloring operations, frees the object from a condition of inertia and gives it a semblance of life. Even when reduced to simple rectilinear, interwoven, or undulating lines, either continuous or repeated at intervals, with or without an originally symbolic meaning, ornamentation is always aimed at modifying the size, material, or shape of the original object, transcending its mere functional purpose, and establishing an interaction between the object and its surroundings.

This explains the ornamental use of patterns derived from the original, and often outdated, technique used in making an object — as, for instance, the reproduction in pottery of basket weaves (see BASKETRY) — as well as the frequent association of different materials, for example, in inlay (q.v.) and metalwork (q.v.), or the combination of disparate media which serve to define the object and even stress its artificiality (see MEDIA, COMPOSITE).

The purely spatial significance of ornamentation is demonstrated by the fact that representational motifs, whenever they are used as ornament, are subject to a process of schematization or reduction, commonly called "stylization": a process which on occasion leads to the production of abstract or purely rhythmic forms such as the arabesque. Stylization indicates a loss of interest in the original content of the image, its reduction to mere evocation or to simple iconographic tradition, but at the same time it shows the tendency of the representative form to assume the shape of the object and to identify itself with this shape even while modifying it. The object also tends to accommodate itself to receive and appropriate the shape of the ornament. This integration of shapes is the beginning of the progressive transformation of the object; in fact there are types of ornamentation that consist not in definite motifs or figures, but purely in the accurate plastic modulation of the object and the studied treatment of its surface (color, brilliance, opacity, or even an imposed roughness).

This reciprocity between the object and its ornament makes it impossible to consider form and ornament separately although this is often attempted, with the inference that the first is a structural element and the second an addition or even a mere accessory or voluptuary element, to be relegated to the category of minor arts. The identity of object and ornament has become obvious in architecture (q.v.), where it is recognized that nothing should serve to adorn that does not serve also to construct (cf. C. Lodoli; F. Milizia), but that ornament

has of itself a visual and emotional function (cf. Piranesi). This has only recently been admitted for other artistic activities, partly because of the distinction drawn between "pure" and "decorative" art. Thus, up to the 19th century, many critics (practically denying that ornamentation could be the subject of historical research), catalogued ornament by "styles" which only vaguely corresponded to the historical phases of art. It was only toward the end of the 19th century that A. Riegl (*Stilfragen*, Berlin, 1893) attempted a critical study of ornamentation, though his study dealt with a limited historical period. He saw in the elaboration and transmittal of ornamental motifs and in the space value of their rhythms a proof of the collective ethos or of that *Kunstwollen* which makes ornamentation the plastic expression of a *Volkspsychologie* independent of the art of the great masters and often in contrast to it.

Art as representation of visible reality. The general problem of figurative art is constantly related to the problem of vision. In its original sense of εἶδος, form is something seen (cf. C. Diano, *Forma ed evento*, Venice, 1952, pp. 14-15), and there is no work of figurative art that does not arouse visual sensations. Thus figurative art depends to a large extent on visual experience. In this sense the whole range of figural phenomena can be classified as follows: (1) forms which depend directly on visual experience and which aim at representing the visible world in what are considered its fundamental values; (2) forms that strive to represent nonvisible things by means of analogy, deduction, or the transcending of the visible; (3) forms representing nonvisible things in order to contradict visual experience (cf. R. Huyghe, *Dialogue avec le visible*, Paris, 1955).

The relationship of art with the visible world acquired a new significance when Aristotle defined the concept of imitation, or more precisely when that concept was interpreted and applied to Hellenistic art; it is especially significant in classic art (q.v.). Mimesis (q.v.), even taken in its widest sense, is a limitation to the creative faculty — the limitation which can be seen in Hellenistic as compared with classic or archaic sculpture. This limitation arises from the recognition of a value in reality or from the assumption that beauty exists in nature. If nature is already a representation of reality and therefore belongs to the world of forms, then the problem of artistic imitation implies at least a problem of vision, requiring an objective knowledge of the laws of vision (see OPTICAL CONCEPTS). It should be noted, however, that although by the 6th century B.C., Greek architecture, with its "optical corrections," showed a clear knowledge of the laws of vision, it was vision subject to the work of art; that is, the correction was intended to preserve the unity and integrity of a given form and to prevent its being distorted by distance or by the effects of light and atmosphere.

In Hellenistic and Roman art, on the other hand, the work of art, whether sculpture or building, is thought of as being part of natural space and subject to the ordinary laws of vision; this explains why figurative art was assigned the task, among others, of reproducing objectively the physical aspects of reality by creating either a suggestive pretense of truth (see PORTRAITURE; STILL LIFE) or illusory effects of depth and relief.

Lessing based his theory of the figurative arts as the arts of space on the principle of their necessary relation to vision; and the same principle underlies the search for a specific space theory of form, a search later carried further by Wölfflin and the critics of "pure visibility." The discussion, which has been at its liveliest in recent decades, is centered above all on new discoveries in the fields of optics and perspective as related to representation (see OPTICAL CONCEPTS; PERSPECTIVE), and particularly on the legitimacy of using representation in art as material for a history of the knowledge of the laws of vision. It should be remembered, in this respect, that the systematic formulation of the laws of perspective is a fundamental innovation as compared with the medieval treatises on optics, not only because it has added fresh knowledge to the subject, but because vision is now considered to be a mental reconstruction of reality rather than mere sensory apprehension (G. Nicco Fasola, *Introduzione a "De Prospectiva Pingendi" di Piero della*

Francesca, Florence, 1942, p. 18); and this formulation agrees with Alberti's statement that the painter must confine his work to that which can be seen (L. B. Alberti, *Trattato della Pittura*, ed. Mallé, Florence, 1950, p. 35).

However, not only does this statement contradict Cennini's of about the same time (referring to earlier work), but all medieval esthetic theories exclude such a relationship between art and vision. Indeed, if it were generally accepted, one should distinguish theoretically between works of art which are the result of mimesis on the one hand and, on the other, applied or decorative art, which is obviously free from this connection with reality. Such a distinction has been dismissed.

Thus, even granted that the ancients knew more about vision than was generally thought (D. Gioseffi, *Perspectiva Artificialis*, Trieste, 1957), it still appears evident that their knowledge was not systematically employed to fix rules for the formal construction of art. Very often, and in different times and civilizations, artists used patterns of frontal, lateral, successive, or continuous composition, dictated by ceremonial, ritual, decorative, or narrative motives, and these did not conform to the contemporary knowledge of the laws of vision.

This is not the place to discuss whether vision is objective and unchangeable, or subjective and apt to change in the course of history. Nevertheless, it is necessary to point out that, whatever the theories elaborated about space in any given culture, they never completely coincide with the conception of space or of the dimension of reality which that same culture has developed through its experience — an experience far wider than that which is reflected in scholarly writings.

The problem arises, therefore, and has been amply dealt with by P. Francastel (*Peinture et Société*, Lyon, 1951), of deciding to what extent any definition of space is conventional; that is, not only how important certain spatial "conventions" may have been with regard to representation (for example, in the theater, in fiction, or even in everyday uses), but what influence such conventions have constantly exercised on the idea of space held by the various civilizations of history. Modern architectural critics attach great importance to this influence, as they are ever more loath to consider the value of a building from an external point of view, as a problem of distance and perspective, and far more inclined to prize the inner space — that is, the space "in which" and not "before which" the observer is placed (see ARCHITECTURE). Thus all figural manifestations acquire again a documentary value, not in the sense that they confirm scientific theories of space, but rather as positive contributions to subsequent conceptions of space.

Not even with the formulation of the concept of perspective as the basis for the true perception and representation of reality was a strict equation established between theory of space and artistic form. It is well known that the Renaissance was not just an Italian phenomenon, and that Flemish painting with the Van Eycks (q.v.) and French painting with Fouquet (q.v.) aspired to a vision as clear and structural as that, for instance, of Piero della Francesca; but unlike him, they employed and experimented with light and its effects and reflections on colored bodies, rather than on line and plane, as the principle and substance of space. Even in Florence Fra Angelico (q.v.) developed his explicit "naturalism" in the same direction, moving from scholastic premises, and Donatello (q.v.) considered perspective as a way of distributing and organizing figures in his "story" rather than as a means of spatial representation.

On the other hand, that unitary representation of space was nothing but the beginning of a vaster plan: a plan for the formal expression of a conception of the world which would be universal in its design but discernible only by experiencing what is visible in nature. Thus the vision of Raphael (q.v.) was a highly dogmatic conception, in all the fullness and plasticity of its revelation; the vision of Leonardo (q.v.) was analytic and straining toward a mysterious fulfillment of a cosmic evolution; the vision of Michelangelo (q.v.) was tragic in its desperate effort to liberate the spirit from matter; and the vision of Titian (q.v.) was dramatic in its awareness of a simultaneous and impetuous flow of nature and history. The artistic form, inasmuch as it is deduced from the experience of the visible, but

through a design abstracted from the limitations of reality and established as a form a priori, becomes in this way a sort of *Urform* or *principium individuationis*, almost a key to open the door of reality and a means of reducing multiple forms to unity. Hence the counterpoise or dialectical relationship of those formal principles such as design and color, modeling and tone, line and mass; or of Roman and Venetian art; or, widening the historical horizon, of such cultures as the Italian and the Flemish or German, or even, much later, of East and West. And from the antithesis arises the attempt to combine or integrate the contrasting elements into an ever more comprehensive and universal vision of the whole.

It was this idea of artistic representation as a conception of the world embracing earth and sky, nature and history, which, outside Italy, gave rise, in conjunction with the religious crisis, to equally unshakable agreement and opposition: as with Dürer (q.v.), who realized the conflict between perspective "als symbolische Form" (Panofsky) and the existence and appeal of things in themselves; as with Cranach (q.v.), an ardent follower of Luther who conceived history, nature, and myth as part of the attractive but fearful world of sin; as with Grünewald (q.v.), who under the impulse of a desperate religious feeling distorted raw reality; as with Bruegel (q.v.), who contrasted heroic ideals with everyday reality, philosophy with the ancient wisdom of the people, tragedy with comedy; as with El Greco (q.v.), who sought an ascetic exaltation, almost an irrational image, beyond classical naturalism.

In other words, the idea of art as a conception of the world or a revelation of truth gives rise to an exaltation both of the object — the world — and of the subject — the human soul which looks at that world through the lens of its own passions and aspirations. Thus, by the 16th century, two contrasting positions came into being: a serene contemplation as against an agitated struggle with reality; lucid knowledge as against an ardent furor or engaged praxis. It is the same antithesis that was later to oppose classicism and romanticism (qq.v.), impressionism (q.v.) and expressionism (q.v.). Therefore the development of these tremendous concepts concerns not only Italian culture, which was largely responsible for their origin, but all European art culture: witness the rise of movements such as mannerism (q.v.), which accepts the objective content of form but insists on working out every conceivable problem propounded by it and is more concerned with the tool than with the object or content of esthetic knowledge; or, in Flanders and Germany, the Romanists (see ROMANISM), who reduce the universal classicism of the Renaissance to a mere question of school.

When the classic ideal of form as something universal, or endowed with a complete power of representation, was taken up and reaffirmed in the baroque period (see BAROQUE ART), and this time with the direct support of Aristotle's *Poetics* and *Rhetoric* and of Cicero's interpretations of these, an irreparable split had occurred in that idea of the universal value of representation. Thus two distinct ideas came into being: the first that of a particular and incontrovertible "truth"; the second, of something above and beyond that "truth" — a verisimilitude attainable only by the imagination working from a sure knowledge of truth and by analogy with it.

A typical example of imaginative art is provided by historical painting (see HISTORICAL SUBJECTS), for the artist's conception of the possible has its roots in the actual event; but this historical and imaginative painting (to which other forms of art can be likened, as closely related to it as the architecture of Bernini or Pietro da Cortona) cannot be clearly defined except by comparing it with its opposite, genre painting (see GENRE). The latter, in fact, provides the factual element on which the imaginative process can build.

Art historians, notably Bellori, attributed the origin of genre painting to Caravaggio (q.v.), not because the artist dedicated himself particularly to this kind of painting, but rather because he contradicted the principles of historical painting. This in itself explains why genre painting has contributed less to the analysis and development of the idea of form as a representation of nature and space than it has to the revaluation and analysis

of things per se, whether inanimate objects (see STILL LIFE) or nature itself (see LANDSCAPE IN ART). And the search for their inner meaning and value has given rise, in fact, to the formulation of special philosophies of art (see PHILOSOPHIES OF ART).

Space in its turn is no longer a reality but a possibility, the dimension of imagination. Thus in architecture, as in painting and sculpture, perspective is no longer a means of representing space but of inventing it; and all that happens in space, within the dimensions of possibility, is transformed, through allegory, from a particular object or person into a universal concept (see SYMBOLISM AND ALLEGORY). This transference of direct experience to a much wider horizon is not without effect on the very vision of reality: the hypothesis engenders the need to verify it, and then the artist realizes that the series of hypotheses has increased the possibilities of experience. The architectural space of Bernini, and that of Borromini and Guarini (though not otherwise alike), are not the result of an objective analysis of reality; even if the concept of space has been interpreted in different forms, the boundaries of the traditional representation of space have been breached and a new path has been opened to new observations, discoveries, and inventions in the field of spatial problems. Thus the experimentation with light by Caravaggio and Rembrandt (q.v.), the use of color by Rubens (q.v.), or the tonality of Velázquez (q.v.) did not spring from an objective analysis of the incidence, reflection, or absorption of light, yet they obviously gave rise to new techniques or experiences and laid the groundwork for that interpretation of reality through light and color which was later to develop into impressionism and indeed beyond it.

The very idea of an immediate realism (q.v.), implicit in Caravaggio's position and developed, with special emphasis on the human content, by the romantics, by Daumier and Courbet (q.v.), marks the end of the great classical naturalism; and it helps us to understand the impressionists' representation of space as something free from all conventional perspective. In fact, the impressionist painters, in their shaping of a new conception of space based entirely on sensation, intended merely to emphasize the value of sensation in the free and unprejudiced conception of the world proper to modern man. Furthermore, it is from these premises that contemporary art, with cubism (q.v.), has set itself new problems of vision, which introduce the idea of time into that of space — meaning by time, the time of experience.

Both contemporary architecture and certain schools of non-objective art (q.v.) have based their spatial research on these problems; the latter, however, although accepting form as the final result of visual experience, consider that result as a premise and a condition of further experience. Thus art becomes the means of an esthetic, and a specifically visual, education, to which recent psychological trends attribute a fundamental importance for the formation of human consciousness.

Art as representation of nonvisible reality. Only a few examples can be given here of the innumerable factors which are not dependent on visual experience but which help to determine the visible form of a work of art. These obviously include practical considerations of all kinds, such as economic opportunities and requirements, which may specify that the size of a building be proportioned to a given capacity or that its grandeur be emphasized to enhance the prestige of the civil or religious ideas which are to be represented and honored by that building. Other considerations — and not only in architecture — may suggest the use of certain materials in place of others, either because they are cheaper or for the opposite reason; or indeed, such considerations may even condition the entire plan. It is well known, for instance, that the need to attain perfect conditions for seeing and hearing in certain buildings has always been a factor in determining the form, and consequently also the artistic value, of those buildings (see ACOUSTICS); that the shape of religious edifices is often dictated by the needs of ritual; that as a rule, the plans for domestic and public buildings are determined by functional requirements; and that the very layout of a city, when considered as a whole

(see TOWN PLANNING), corresponds to the development of that highly complex and interrelated activity, city life.

An even more precise determination of form takes place whenever a symbolic significance is attached to it, as it is then subject to strict rules prescribed either by external factors such as religious belief (see BUDDHISM; CONFUCIANISM; HINDUISM; ISLAM; JAINISM; SHAMANISM; SHINTOISM; TAOISM; TOTEMISM), custom, tradition, or the whim of the patron, or by the artist's own decision. Much has been written about the symbolism of architectural forms. It has been suggested that the vaulted roof, for instance, derives from the supposed shape of the sky; but this theory can be held only in reference to the origin of the vault, and then only remotely. There are, however, certain forms which undoubtedly originated purely as symbols. For example, the Indian stupa, which was originally a repository for a relic, represented the universe as the cosmic mountain, the symbol of the universe as pervaded by the law of Buddha. Only at a later date was the form of the stupa modified to conform to practical requirements. A similar, if less direct, symbolism has been recognized in the forms of the Romanesque and Gothic cathedrals and in certain baroque buildings, by various scholars (H. Sedlmayer, *Das erste mittelalterliche Architektursystem, Kunstwissenschaftliche Forschungen*, II, 1933); and the studies of L. Hauteœur (*Mystique et Architecture*, Paris, 1954) and M. E. Baldwin-Smith (*The Dome, A Study in the History of Ideas*, Princeton, 1950) have demonstrated the survival of ancient ideological concepts in recurrent architectural types and forms.

Sometimes the artistic image can even spring from the specific intention of avoiding representation, or of representing a subject nonphysically, or, indeed, of concealing it by using signs which only the initiated can decipher. This is true of the symbols of the mystic religions, of various sects, and, in a different way, of certain cryptographic symbols found in the catacombs (e.g., the monogram of Christ and the allusion to his name in the image of the fish). In other cases, as in the Hebrew and Islamic religions and later in Protestant Christianity (see REFORMATION AND COUNTER REFORMATION), the representation of God by means of naturalistic analogies is expressly forbidden (see IMAGES AND ICONOCLASM), although symbols, signs, and letters of the alphabet can be used for this purpose. In Buddhism, although there is no explicit prohibition of naturalistic representation, symbols of known significance are used because it is felt that it is impossible to express in human form the sum of the values contained in Buddha, who is both the human teacher and the supreme prince.

The conviction, always widespread, that art takes form by means of definite technical processes, which, however, are enriched by supernormal and imponderable factors, explains the constant relationship existing between art and the supersensory world. It also explains the task assigned to art of giving form to entities believed to exist beyond the horizon of experience and concepts recognized as being of common interest and validity. This wide range includes representations which give concrete expression to tribal religious beliefs and, in more highly developed civilizations, to the image of the divine (see DIVINITIES) or the fabulous characters of myth (see MYTH AND FABLE), to the forces of evil (see DEMONOLOGY), to the latent powers of nature and their secret links with human life and the world of instinct (see MAGIC; SEXUAL AND EROTIC ELEMENTS), to the destiny of man after death (see ESCHATOLOGY), or to the physical universe and the influence of the stars on the fortunes of men (see ASTRONOMY AND ASTROLOGY). Even the ways of producing images expressing these metaphysical entities, whether dictated by rules and customs or evolved by the artist, vary from the purely conventional or ideographic sign (see SIGNS AND CONVENTIONAL SYMBOLS) to the symbol understood as the syncretism of an abstract entity with a concrete object, or to allegorical transposition and personification, which is normally used for the metaphorical representation of abstract concepts, moral ideas, etc. (see SYMBOLISM AND ALLEGORY). Such processes, although somewhat different from the mental process of the artist, should nevertheless be considered evidence of the tendency to reconstruct and in some way to control and discipline

the imaginative process; and in this sense they have been the object of theories and of practical instructions.

In the realm of religious beliefs and the supernatural in general, art has a function also as intermediary, for it lends itself to acts of devotion (see DEVOTIONAL OBJECTS) or simply of evocation or exorcism, and furnishes the appropriate instruments for the rite (see LITURGICAL OBJECTS). In accordance with various conceptions of the sacred and the feelings and attitudes which it induces in the human soul, art sometimes expresses the state of rapt contemplation and of almost mystical union with the divine, or the consternation evoked by the demonic and the unleashed forces of nature, sometimes assists the invocation of supernatural powers in sacred dances and ceremonies (see MASKS), and on occasion adapts itself to the needs of ritual. In religions which have grown out of a national past and aim at propagating a doctrine or at imparting moral teaching either directly or by means of examples, art replaces or complements the written word by giving visual illustration to the teaching of the priest or by representing, with an edifying purpose, episodes in the life of the Incarnate God and of the prophets and saints (see BIBLICAL SUBJECTS; BUDDHISM; CHRISTIANITY; SAINTS, ICONOGRAPHY OF); or with a more specifically moral aim, art represents human acts of a sublime or heroic character (see SUBLIME, THE).

The secular function of art, even though it does not coincide with its religious function, develops along very similar lines, although with a more limited scope. Here too, in fact, we find public buildings which combine practical and representative functions and which embody in their form the grandeur and nobility (whether actual or imagined) of the state or municipality or even the financial power of a business concern. There are buildings and monuments (q.v.) whose only purpose is that of celebrating civic ideals such as liberty and national independence, or a historic event, or national heroes, or those who died for their country.

The relationship of art to society has other aspects also, which, though less imposing, give rise to a wide variety of art forms. Parallel with religious symbolism, but conceptually on a lower plane, there develops a social symbolism (see EMBLEMS), which often obeys precise heraldic rules and tends to express certain social concepts and values by the use of images, signs, and colors. This symbolism is evidenced in military insignia, flags, and arms (see ARMS AND ARMOR), as well as in medals, coins (see COINS AND MEDALS) and seals (q.v.), etc. In the same social sphere, art is also entrusted with the task of mediating, recalling, suggesting, and persuading: from the ancient representational or emblematic signs intended above all to give information or warning, there is a gradual transition to the art of the advertisement (see PUBLICITY AND ADVERTISING), conceived in such a way as to make a deep impression on the onlooker and to persuade him to vote for a particular party or person, to attend a particular play or film, to buy a particular product, etc. The artistic interest of this entire effort, usually ephemeral and with few pretensions to quality, consists above all in a search for simple and striking forms and lively colors designed to attract the attention of the passer-by and arouse in him a vivid visual response that will immediately, and almost unconsciously, register as a reminder. One of the most conspicuous aspects of modern commercial advertising, which occasionally attains a remarkable artistic level, is the fusion of graphic and figurative elements (see GRAPHIC ARTS) whereby a word, a phrase, or a set of initials acquires the significance of a concrete image and the image assumes the vigor and clarity of the written word.

Ever since Lessing, critics have tried to define clearly although within the realm of a comprehensive conception of art, the limits of visual art in its relationship to poetry, literature, and music. There can be no doubt that the visual arts, from their intercourse with those other arts, as well as with sciences and philosophical thought, have derived impulses and ideas which have greatly contributed to the enrichment and development of the fund of images and even of the ideational process.

The most obvious aspect of this relationship is the parallel between a literary text and an illustration that endows a poetic image with a form in space and with almost physical reality.

The urge to visualize, or to translate into terms of space, an event which takes place in time is evident in the paintings and reliefs of ancient Egypt, India, and the Far East, and it is a plausible explanation for the custom of illustrating literary texts with illuminations (see MINIATURES AND ILLUMINATION), and later, after the invention of printing, with engravings (see ENGRAVING). In certain artistic cultures, particularly in Germany during the 15th and 16th centuries, the profusion of book illustration profoundly influenced pictorial and sculptural composition, since it suggested a narrative continuity between figures and episodes and involved an effort at exact representation and distinctive facial characterization. Its importance is evidenced in the fact that even such leading artists as Schongauer and Dürer (q.v.) devoted themselves to the art of illustration.

Another form of association and integration of the written word with the illustration is to be found in the engravings, originally only of devotional character (see DEVOTIONAL OBJECTS), in which the image of a saint or a miraculous event is accompanied by a prayer or invocation or a simple comment sometimes written in popular verse. As the range of subjects was enlarged to include proverbs, maxims, etc., it developed into what is known today as the "vignette" (which in 18th-century France was the word used to describe small marginal illustrations enclosed in a border of vines and tendrils): usually a small scene with figures accompanied by a witty remark, neither of which can be understood or appreciated without the other. In the 19th century, particularly after the invention of lithography, the illustration with comment was widely employed by artists of renown, such as Gavarni and Daumier (q.v.), for satirical caricatures (see COMIC ART AND CARICATURE) of the political and social scene.

A more restricted form of association of the written word with illustration can be seen, on the decorative level, in certain attempts to enhance a written text, whether it be a book page, a poster, or the inscription on a monument, by balanced composition and well-designed letters (see CALLIGRAPHY AND EPIGRAPHY). In the Islamic, Indian, and Far Eastern civilizations there is no precise borderline between calligraphy and painting: the quality of the writing, as sign or arabesque, is part of the poetic or literary quality of the text. In the West, the design of the letters for epigraphy and printing is the subject of a specific formal study. This has always been stylistically linked to the development of taste in the visual arts, right up to the most recent trends in the graphic arts (q.v.), where the names of the great artists, calligraphers, and designers, such as Feliciano and Dürer, are preserved in the names of the typographical alphabets derived from their lettering. Often the letters of the alphabet, whether or not they make up words and phrases, have a definite decorative role in the composition of a work of art. This is true especially in architecture but also, in the Islamic world, in fabrics and ceramics; and it is found in medieval ivories, enamels, goldsmith's work, and, obviously, medals and coins.

The association of art and literature has undoubtedly produced a far wider range than we have examined of works arising from a common inspiration, although their variety eludes classification; among the finest examples are those Chinese and Japanese paintings which are poetry, both literally and figuratively. In Western art the relationship is two-sided, resting on Horace's formula, "ut pictura poesis," which became one of the main tenets of the philosophy of art during the Renaissance and afterward, when the great cycles of art works, and sometimes also single works, were inspired by "outlines" supplied by humanists and men of letters and drawn from classical literature. Historical and mythological subjects became very popular (see HISTORICAL SUBJECTS; GENRE), as did the illustration, particularly on *cassoni*, of allegorical, mythological, and erotic subjects, mostly drawn from the *Triumphs* of Petrarch and Boccaccio's stories. Leonardo, however, was aware of the possibility of a deeper relationship between art and literature, one derived from a common vision and not confined to illustration, when he defined painting as "unspoken poetry." Botticelli not only illustrated subjects from classical poetry, which had reached him mostly through the works of

Poliziano and the humanists of Lorenzo the Magnificent's circle, but tried to build up an allegorical method which would serve equally for poetry and the figural arts, as is shown by the *Calumny of Apelles*. Michelangelo's poetry and his plastic compositions are certainly related in style; Titian used to call "poems" those of his paintings which had an erotic-mythological character; Dosso Dossi was strongly influenced by the poetic vision of Ariosto; and Tintoretto (q.v.), and later the Caracci (q.v.) and many of the 17th-century painters, were similarly influenced by Tasso's poetry. Bellori was fully conscious of the analogy (almost interchangeability) between the literary and the visual arts: his criticism is based on very emotional and penetrating descriptions which tend to value a particular work of art according to its translatability into literary prose.

In the 18th century, when social life was the center of interest, Hogarth (q.v.) not only took subjects from the fiction, drama, and newspapers of his day but based whole cycles of paintings, such as *The Rake's Progress* and *Marriage à la Mode* on the dramatic succession of scenes which he found in contemporary novels and plays; while in Venice we find a parallel to the paintings of Pietro Longhi in the anecdotes of Gasparo Gozzi in the *Gazzetta Veneta*. The opposite, preromantic tendency toward the "sublime" (q.v.), which was particularly strong in Blake, arose from a renewed interest in Milton, Dante, and Shakespeare, and, as a logical consequence, in Michelangelo.

In the 19th century, artists and men of letters fought side by side to set up new standards of taste, so that analogies, parallels, and mutual relationships became ever more frequent and obvious, based on corresponding analyses of concrete problems of language and expression. Thus, in addition to the stylistic connection between Ingres (q.v.) and Stendhal, we find documented relationships linking Delacroix (q.v.) with Victor Hugo and with Baudelaire, and these writers with the impressionists, who also had something in common with Flaubert. The same experimentation with style created a bond between Mallarmé and the group of the "Nabis," particularly Bonnard and Vuillard. Indeed, modern schools of art have found their leaders in men of letters: Apollinaire for cubism, Marinetti for futurism (see CUBISM AND FUTURISM), and Mayakovsky for the Russian avant-garde.

It is less easy to document the relationship between the visual arts and music, the theater, and choreography; but the existence and importance of this relationship is beyond question: many attitudes and gestures found in Indian sculpture are derived from the dance; certain patterns of rhythmic composition found in Byzantine art are modeled on the rhythm of monodic music; the unitary conception of space and the complex composition by means of counterpoised masses adopted by Michelangelo and the baroque artists reproduce the elaborate structure of polyphonic music; and even abstract (or non-figurative) art has often attempted to translate into visual impressions and into linear and color rhythms the auditory sensations and rhythms of music, and by so doing has contributed strongly toward the negation of plastic or perspective space, toward the introduction of time factors into spatial vision (see SPACE AND TIME), and toward the interpretation of the so-called "fourth dimension."

Much more marked, however, is the influence of the theater and, generally speaking, of all forms of entertainment on the visual arts. Since the 15th century at least, artists — particularly painters and architects — have been called upon to work not only in the theater (see SCENOGRAPHY), but also in arranging celebrations, tournaments, and spectacles; and having to face and solve concrete theatrical problems, they gained much precious experience for their own artistic activity. But nowhere and at no time were they ever passive or indifferent spectators; the experience gained from the use of imaginary space and scenic fiction strongly influenced their representation of space (see Kernodle, *From Art to Theater*, Chicago, 1944; P. Francastel, *Peinture et Société*, Lyons, 1951). An inventory of scenic conventions, choreographic movements, and rhythmic gestures introduced into art from the theater in every age would be too long; it is sufficient to note that until very recently scenic space

has always greatly influenced the construction of pictorial space: witness the paintings of Renoir, Seurat, and Toulouse-Lautrec. Contemporary art has felt the decisive influence of the cinema (particularly in the fractionized representation of space and motion) and of modern photography in general (anaphots as well as stroboscopic, and even infrared, photography).

The relationship between art, literature, and the theater is not limited, however, to the determination of space and the distribution of masses in the composition: the progressive exactness of the representation of the figures and the portrayal of character, temperament, and facial expression are all traceable, at least in part, to this relationship.

The almost constant effort to reproduce the features of particular people (see PORTRAITURE) has many motives: the main ones are the desire to preserve and hand down to posterity the memory of deceased members of the family, the wish to glorify outstanding personalities (or to publish their infamy, as in Florence where portraits of condemned criminals were displayed), and the intention of identifying the authority of the state with the physical person of the sovereign (for instance, on coins). Each of these purposes corresponds to a particular type of portraiture.

But as the memory of a person can never be separated from an appraisal of his moral qualities, a portrait, although usually considered a typical example of objective imitation, is always an interpretation and reveals the psychology of the subject through his features. In fact, with such artists as Rembrandt (q.v.), Gainsborough (q.v.), or Goya (q.v.), portraiture becomes a form of introspection. However, the idea that the impulses of the soul can be portrayed only through the impulses of the body (see LEONARDO DA VINCI) brought about, along with the study of anatomy (see HUMAN FIGURE) that more subtle and elusive form of anatomy, the study of physiognomy: that is, the interpretation of the most tenuous feelings and emotions through the features and their ephemeral expressions. The study of physiognomy naturally produced a whole range of categories, types, and subspecies (minutely analyzed by Lombroso), as if to distinguish the more evident features, revealing a temperament, from others which reveal moral qualities, and still others, even more subtle, which betray a particular mood (see CHARACTERIZATION).

As a result certain types take on a conventional function (as in the theater); thus Christ, the Virgin, and Mary Magdalene are represented as "handsome" and the Jews and torturers as "ugly," expressing a moral judgment, while the figure of a Turk or a Negro may indicate that the action takes place in the East (see COSTUME).

Caricature (see COMIC ART AND CARICATURE) is a frequent result of the study of physiognomy and is certainly related to the use of tragic and comic masks in the theater (see MASKS). It may aim merely at underlining an abnormality or an oddity in a person or a situation, or it may endeavor, by distorting the features, to reveal a moral aspect, thus superimposing a mask on the face, which betrays not only the character but also the real role of a given person in the scene portrayed.

The relationship of art with science is also very complex, as mentioned in connection with theories of vision. This is true also, on a different plane, of its relationship with the technical means and processes of production. We will merely note, therefore, that in all times science has called on artists for pictorial documentation and explanation of its theses. Thus we have many analytic drawings of anatomy (see HUMAN FIGURE; ZOOMORPHIC AND PLANT REPRESENTATIONS), of parts of the earth, and of the universe itself (see COSMOLOGY AND CARTOGRAPHY).

In certain periods, and particularly during the Renaissance (see LEONARDO DA VINCI; DÜRER), artists used means of research similar to those employed by science, in the fields of anatomy, zoology, and botany as well as physics and mechanics. In the 19th century there was certainly a connection, although not a fundamental one, between the impressionists' conception of color (see IMPRESSIONISM) and Chevreul's theory of complementaries. A little later the supporters of pointillism and divisionism founded their interpretation of color and their technique on the theory of the refraction of sunlight.

The connections between art and philosophic thought are less easy to define; these are nearly always confined to analogies of cultural events and contemporary problems or to allegorical representation of abstract concepts (see *SYMBOLISM AND ALLEGORY*). Moreover, since in the majority of past civilizations philosophy was only an aspect of religion, the relationship of art with philosophy is included in the wider field of the links between art and religion. Attempts to create a "philosophic art" — and not just in the sense of choosing philosophic subjects, as Giorgione (q.v.) did with his *Three Philosophers* — were made only toward the end of the 18th and at the beginning of the 19th century by the painter Blake (q.v.) and the architect Ledoux (q.v.), who tried to give a direct philosophic meaning to their work. And later the same has been true, but to a lesser degree, of Kandinsky (q.v.), the surrealists (see *SURREALISM*), and some other contemporary artists who enriched the vocabulary of art with their images from the world of dreams and the subconscious.

Most of the relationships pointed out in this section have a particular bearing on themes and subjects (see *THEMES*); but as content cannot be separated from form, either in the process or in the result of the artistic effort, it is apparent that throughout the history of art the indisputably visual value of form has not depended solely on direct visual experience but has been largely conditioned by the significance attributed to visible phenomena as indirect revelations of a vast domain of reality above and beyond the limits of the actual phenomena.

Art as representation of the unreal. The principle "ut pictura poesis," taken in its broadest sense, implies that no limit can be imposed on the imagination of the artist, not even the limits of reality or possibility. Plato distinguished (*Sophist*, 219a) between the simulacrum and the copy, thus acknowledging an image unconnected with concrete objects; Aristotle (*Poetics*, XXV, Loeb ed.) said, "In general any impossibility may be defended by reference to the poetic effect or to the ideal or the current opinion. For poetic effect a convincing impossibility is preferable to that which is unconvincing though possible." Quintilian (*Institutiones Oratoriae*, VI, 2, 29) acknowledged that a painter can make absent or nonexistent things appear present, as "visiones."

The whole history of art offers many examples of a deliberate search for the unreal, the improbable, and the downright fantastic (see *MONSTROUS AND FANTASTIC SUBJECTS*); although, in view of what has been said above, it may be that certain forms that appear to be the product of pure fantasy are instead derived from forgotten myths and religious beliefs. In other instances what appears purely fantastic is in fact directly connected with themes and motifs of unorthodox religious beliefs (see *HERETICAL SUBJECTS*) or esoteric rites and practices (see *BOSCH*); or it may be intended to veil or conceal rather than to make plain. Moreover, the world of arbitrary imagination naturally tends to explore the depths of the subconscious, where infernal myths, terrors, complexes, and obscure premonitions have their roots (see *DEMONOLOGY*; *MAGIC*; *TERROR IN ART*). This field includes, therefore, the monstrous, the shapeless, the changeable, and all that goes under the name of "imagerie": i.e., the images inherited from the past and often distorted or transformed through the ages — images which are always distinct from form (since form, being a representation of reality, has a definite structure of its own) and which have contradictory tendencies to adopt a fixed pattern and to change continuously. This very lack of structure explains why fantastic imagery can more often be found in decoration (see *ORNAMENTATION*), since this can, and indeed must, become one with the object. Being by nature nonspatial, decoration takes as its own space the screen on which it happens to be projected. Thus it follows the curve of a vase, is fragmented on a flat pavement or a rug, is elongated on a doorpost or on the narrow margin of a page.

The mechanism of arbitrary imagination changes according to the different structures of rational thought with which it is confronted. At the origin of these fantastic forms there are always elements drawn from nature, such as animals and plants

(see *ZOOMORPHIC AND PLANT REPRESENTATIONS*), but their final aspect is the result of an unnatural and irrational combination, almost an inversion of the normal processes of association. Their very irrationality thus displayed proclaims this reversal as purely arbitrary (see *FANTASY*); and, as one can see in Arcimboldi's figures, the ambivalence and polyvalence of the images correspond to the artist's whim (human faces made up of dissociated objects; figures that become landscapes when turned upside down). The irrationality of the fantastic occasionally reaches the point of confuting the rational: this can be seen in the perspective "anamorphoses" in which a simple shifting of the angle of vision is sufficient to transform the representation radically. Nor is this all: there can be no doubt that to the sphere of the fantastic and the whimsical belong even those *trompe l'œil* works which are meticulous imitations of the object, in that such obsessive attention to detail destroys spatial orientation so that the object, ceasing to be natural, becomes "too true" and thus no longer true but absurd. Another notable example of the fantastic — that is, art which is not the result of imagination and therefore wavers between exact imitation and the completely arbitrary — is modern surrealism (q.v.), which reduces the artistic process to an automatic transcription of the subconscious.

The theme of the real-unreal and of the fantastic most betrays its mechanistic nature when it intends to show itself free and autonomous, as can be seen in the attempt to confer a sham animation on certain artistic inventions by means of hidden mechanisms (see *AUTOMATA*), or, conversely, in the artistic elaboration of mechanical objects (see *SCIENTIFIC INSTRUMENTS AND APPLICATIONS*), equipment used in games (see *GAMES AND TOYS*), and jointed and flexible figures (see *PUPPETS AND MARIONETTES*).

Art and history. The transmission of art culture occurs largely through the same process of formation and transmission common to all other forms of culture. The formative process of art (see *EDUCATION AND ART TEACHING*) also follows the evolution of general educational methods in their historical development. Only those aspects of the transmission and development which are peculiar to art will therefore be mentioned here.

Every great movement in the historical development of art has been due to a great artistic personality and to his influence on his contemporaries and successors; but this in no way denies the tendency to formulate artistic experience and transmit it either through certain themes and motifs (see *THEMES*), or through specific interpretations of reality in relation to art (see *PHILOSOPHIES OF ART*), or through outright codifications of stylistic and technical principles (see *TREATISES*). Each of these methods — and especially the last, which often produces complete theories of art — is always related to the work of a particular artist or to the artistic taste of a given period which is thought to have attained such faultless results that it can fittingly represent the very perfection of art. Thus theory, whether limited to a series of practical precepts or developed into a general system of esthetics, is always the result of a critical judgment (see *CRITICISM*) and carries the implication that art can be taught by means of theoretical propositions and demonstrations.

Always remembering that it is impossible to separate the technique from the style, one can say that artistic techniques follow, up to a certain point, the development of productive techniques, but they differ from these in the method (rather than the degree) of their development.

The theory that all art is one was formally expressed and stated only during the Renaissance; but it is implicit in the interchange of experience that has always occurred between different artistic techniques. This exchange can sometimes be seen in the collaboration of different arts toward a well-balanced esthetic result: for instance, when a piece of architecture is completed with paintings and sculpture (and possibly with stained-glass windows, tapestries, etc.). Each of these has its own independent artistic value but at the same time forms part of a harmonious whole, though the parts are not necessarily of the same date or cultural sphere.

Another means by which these experiences are exchanged (and one of greater importance for the historical development of the means and processes of expression) is that adopted whenever an artist attempts to achieve through his own technique visual effects or values generally attained by other techniques: for example, when painters try to achieve the space of architecture or the modeling of sculpture, or architects try to attain the formal unity of sculpture or the color of painting, or again, when sculptors try to reach the structural perspective of architecture and the luminous and colorful mobility of painting. Such exchanges are also often based on the borrowing of themes and motifs, as in paintings with architectural subjects (see *PERSPECTIVISTS*) or in the late-19th-century sculpture which repeated the pictorial themes of the impressionists. But in the most important cases the interchange leads to a real transformation of the means of expression, as, for instance, in painters influenced by Donatello.

These various types of exchange of formal experience occur spontaneously in art cultures that draw no theoretical distinction between art and handicraft; during the Renaissance and the baroque periods they turn into a dialectical relationship between certain concepts, e.g., plastic, pictorial, and structural. These tend at the same time both to become ever more distinct and to be integrated with one another. Hence the aspiration for, and recently the theorization of, a "synthesis" of the arts (see *INDUSTRIAL DESIGN*).

A particular problem in the propagation of art culture is that of fixing and transmitting a certain type of image (see *TYPOLOGY*; *ICONOGRAPHY AND ICONOLOGY*) or a particular structural type (see *STRUCTURAL TYPES AND METHODS*). The ancient legends on the emergence of the art of portrayal, and later, in a more concrete fashion, the early funeral masks (see *MASKS*) reveal the idea that it is possible to capture a fragment of reality and preserve it beyond the death or disintegration of the person or thing with which the image was originally connected. But, in accordance with the Platonic idea of the "simulacrum," the image is not always drawn from actuality: it may also be built, as representations of gods are, from the combination of various attributes or properties.

Owing to both the natural tendency toward uniformity and the rigidity dictated by ritual requirements, the images tend to become fixed in a constant pattern, creating a traditional imagery (see *ICONOGRAPHY AND ICONOLOGY*) that may well be independent of the contemporary conceptions of form. Traditional imagery, however, is neither rigid nor linear; the idea inherent in the image has its own historical development, and thus the image can lose certain meanings and acquire new ones, just as it can lose certain attributes or be enriched with others. Nor is it rare that several images are combined or that radical change in the original meaning occurs, whether intentionally or otherwise (see *ICONOGRAPHY AND ICONOLOGY*).

The study of iconographic traditions, originally considered a side line of the history of art, is now held to be fundamental (Warburg, Saxl, Panofsky) to the history of art culture, not only in the development of a definite awareness of form or of a global conception and representation of reality, but also in the most secret recesses of the subconscious, both in the individual and the community, and the permanence and transformation of myths.

The transmission and renewal of art culture are also closely connected with the attitude of the artist toward history and with his conception of the intrinsic historical orientation of his own work. In certain times (for example, during the Middle Ages in the West and in most Oriental art cultures) the artist seems to have been eager above all to follow an iconographic, stylistic, and technical tradition (see *TRADITION*); but in other periods, for instance in European art since the Renaissance, the artist has been chiefly concerned with rejecting tradition and with fundamental innovations in the art of representation. Aside from certain exceptional changes of themes and forms caused by sudden historical upheavals (e.g., the abrupt interruption of indigenous American art cultures by the European conquest and the imposition of another culture based on new religious and formal premises) we find in the history of art other profound

revolutions which have nearly always provoked a contrary desire to preserve. Innovations in themselves, moreover, often lead to a new historical vision or to an antitraditional reevaluation of products and concepts of an earlier art (see *ANTIQUÉ REVIVAL*); or, indeed, certain forms of the past may be taken as outright examples of perfection to be imitated and repeated. Like the return to antiquity longed for by the Renaissance, this reevaluation may be based on a clear and enlightened understanding of the concrete evidence of ancient art or on an abstract theorization and schematization of such evidence: for example, the taste for antiquity that developed at the end of the 18th and the beginning of the 19th centuries sprang more from Winckelmann's theories than from the direct study of monuments (see *NEOCLASSIC STYLES*), and the revival of the Gothic rests on a sort of formula rather than on a searching study of Gothic forms (see *NEO-GOTHIC STYLES*). When, instead of trying to understand the concrete historical meaning of the art of the past, artists attempted to sum it up in abstract stylistic formulas, it was easy to combine these formulas (see *ECLECTICISM*), in a manner that is more critical than artistic.

The importance of the critical component in the process of formation and transmittal of art culture and in the creation of art itself was explicitly stated in the 18th century by Sir Joshua Reynolds (*Discourses Delivered at the Royal Academy*, London, 1771 and 1778), and it has been ever more widely recognized in romantic and contemporary art.

A negative judgment on contemporary art and that of the recent past, as well as a need to renew a heritage of imagery by now almost incapable of arousing imaginative response, are the main causes of the impulse to escape from one's environment and of enthusiasm for the art of distant countries (see *EXOTICISM*) and for artistic cultures recently discovered (see *PRIMITIVISM*) and therefore fascinating.

In various periods and cultures the historical value of art has been interpreted as a direct and precise response given by art to a particular historical situation: a situation which, in its immediacy, exacts not so much a disinterested portrayal as the artist's wholehearted participation and, indeed, his involvement, in the dynamics of community life and even in class and party warfare (see *REALISM*). In other cases the artist, casting his mind into the future, outlines utopian programs for ideal worlds, states, and cities (see *TOWN PLANNING*), or he may choose advanced or even extreme ideological positions, which are described as "avant-garde" (see *MODERNISM*) and presuppose a rejection of tradition and historical experience.

THE WORK OF ART IN THE WORLD. *The social condition of the artist.* Artistic activity, even if it aims at creating stable and universal values, is always directed to a particular society, or at least to a particular public. The value attached by any society to artistic activity as a whole can be judged by the social condition of the artist and, more specifically, by the way in which his works are received, understood, preserved, and handed on. The social condition of the artist, at least in so far as he is linked to the productive activities of his time, is part of the social history of production, that is, of the trades and professions. Only beyond this common limit does the specific function of the artist, as the creator of values superior to economic ends and the average quality of production, acquire real significance.

Recognition of the technical specialization and profession of the artist is evident in primitive cultures of today, which in some respects duplicate the conditions of prehistoric and protohistoric societies. This character of technical specialization is also shown by the frequent transmission of artistic skills from father to son, a process resulting in progressive increase and refinement of the operative procedures. Furthermore, peoples of this cultural level provide instances of a clearly esthetic attention to all products, including everyday implements and utensils: witness the artistic traditions of the Massim (see *MELANESIAN CULTURES*) and of the Bakuba (see *BANTU CULTURES*). And the prestige of the blacksmith-magician in many of these cultures confirms this special condition of the artist since the beginning of metallurgy.

The formation of stable dynasties and of priestly castes, or the concentration of religious and political power in one person or in one privileged group as in ancient Egypt or in the ancient Oriental civilizations, gave rise to the first classification of products graduated from those destined for the temple or the royal household, to those intended for the everyday life of the court or the dignitaries, to those intended for the people. Thus there came to be a gap between superior cultural functions, linked to ritual and mediating between the divine and the human, and inferior ones, related to practical living. The probable servile condition of the artisans, or of the best of them, should be considered rather as the origin of a permanent relationship between patron and artist than as an indication of a low esteem for art activity. Rather, art in its highest form was considered as a glorification of the god, the sovereign, and the state. In Crete the court was the center of all organized artistic production; traces of such organization have been found in the Palace at Knossos, and it is apparent that a definite distinction was made between the rank of the workman who prepared the material or rough-cast the object and that of the craftsman who, perfecting the most delicate parts of the object, made it into a work of art. In other civilizations, of course, such as those of the Middle and Far East, the situation of the artist reflected very different social situations: for example, in Hindu India and in China, painting was believed to be of natural origin and extraneous to the work of man and was therefore considered to favor culture and the principles of good conduct (Chang Yen-yüan, *Record of Famous Paintings in Successive Ages*, ca. A.D. 847).

In the Greek cities of the Homeric age (see B. Schweitzer, "Der bildende Künstler und der Begriff des Künstlerischen in der Antike," *Neue Heidelberger Jahrbücher*, n.s., 1925, p. 28 f.), society was divided as follows: (1) nobles and landowners; (2) demiourgoi, or craftsmen (heralds, doctors, rhapsodists, artisans) who worked for the community; (3) mercenaries and workmen. Artists and artisans were considered therefore as possessors of a technique which enabled them to produce things useful to the community. Artists were still so regarded by Plato, although he admitted that some, because they did imitative work devoid of any immediate utility, were estranging themselves from productive activities. The censure which Plato directed at these people was that of the aristocrat who dislikes seeing members of a lower class aspire to purely cultural functions; but at the same time it was an acknowledgement of the divorce of the artist from the artisan and of the beginnings of a class of artists who, though exercising a manual activity, had attained the level of poetry, if not of speculative thought. Moreover, when Plato maintained that only the artist can judge art, he was spurning a technique which he believed to be foreign to the culture of his own class; but at the same time he was admitting the possibility of a judgment which, subsuming the single work in the idea of a better or of a perfect work, implies that the development of art is actuated by a search for formal perfection.

A little later Aristotle's *Poetics* laid the basis for an evaluation of the artist which is analogous to that of the poet, although without mention of the visual arts. And from many indications one can conclude that a work of art was deemed a personal creation and, as such, a source of pride to its creator. By the 8th century B.C., works of art and even handicrafts bore the signature of their authors, and renowned works of famous artists were the objects of particular cults, brought fame to sanctuaries, and became the goals of pilgrimages. Various sources indicate that the prices paid in the 6th and 5th centuries B.C. were very high (see PATRONAGE) and relate numerous examples of the considerable esteem in which artists were held by sovereigns, particularly by Alexander the Great. In fact, in the Quattrocento the Humanists vindicated the artist's claim to prestige and authority on the basis of these records.

Finally, the Greek artist was, like the poet, the creator of myths; and if art was not the immediate glorification of the god and the state, as it was later in Rome, it was nevertheless a glorification of the past of the god and the founders of the state and thus created the myth that was felt to be a higher

form of history. For example, the relationship between Pericles and Phidias was something more than the relationship between artist and patron: Phidias was the most profound interpreter of the political ideas of Pericles, and the Parthenon was at once the symbol of and the instrument for the religious and political unification of the Hellenic peoples and the transformation of Greek society after the Persian Wars. Something similar was to occur in India during the Moghul empire.

A general educational function, although second to that of poetry and music, was attributed to art. Aristotle (*Politics*, VIII, 3) considered that by the teaching of painting one could train a person to judge better not only works of art but also natural beauty; Pliny the Elder (*Naturalis Historia*, XXXV, 77) states that in Greece the teaching of painting was the "first stage of the liberal arts" and that the practice of this art was forbidden to persons of servile state. A judgment on artistic value was no longer the prerogative of the artist: the work of art which was of interest to the community was judged by the community or by those who represented it. Thus arose the ancient custom of organizing competitions for works of public interest. Lucian (*Zeuxis*, 5-7) lists three ways of judging a work of art: that of the common people, looking only for novelty; that of the artist, who appreciates the technical quality; and that of the educated man, who is interested in character and expression.

This theme of plural interpretations of art on different levels was to remain fundamental (see CRITICISM) also as a principle for equating the imaginative process with that of allegorization (see SYMBOLISM AND ALLEGORY), which implies a possibility of interpreting works of art according to different intellectual levels. It is also the basis for upholding the universal value of the work of art; for art should be accessible to all social classes and capable of communicating its message to the educated as well as to the illiterate, impressing the mind of the former and the imagination of the latter. (In the West, during the Middle Ages, art was a means of imparting religious truth to the unlettered, but this did not diminish its value, because the learned interpreted it differently and on a higher level.)

The attitude of Roman culture toward art, and consequently toward the artist, may seem contradictory. From a political point of view, the typical Roman viewpoint, art was confused with luxury and ostentation and was, therefore, morally censurable. But since the immorality concerned rather the uses to which art was put than art itself, art ceased to be morally reprehensible when it became a means of expressing and glorifying the power of the state. Cicero, in his oration against Verres, insisted that Scipio showed a greater understanding of art than Verres who had a passion for it, because Scipio, realizing "how beautiful these objects were, reckoned for this very reason that they were not made for the cupidity of man but for the ornamentation of temples and cities, so that to us, born later, they seem religious monuments."

Cato's moralistic condemnation of art, even though mitigated in Varro and in Cicero, remained the basis of the evaluation of art in Roman culture (G. Becatti, *Arte e gusto negli scrittori latini*, Florence, 1951), and it contained a critical principle of the greatest importance: art was the expression of a way of life that was not Roman but Greek. The legitimacy and value of art were not disputed; it simply expressed different ideas from those on which Roman civilization was based.

This was the first assertion of the historical bond which links a particular art to a particular civilization; and even when art was employed in a civil function or for the glorification of Roman magnificence, it remained something extraneous, foreign, imported, almost a trophy, the exterior ornament of a structure, a decoration. Since the question was not one of creating art, but rather of procuring it, one could only assume before it the position of the spectator or judge; and in fact, critical activity grew out of a rejection of artistic activity, which was deemed unworthy of a Roman citizen. There still survived, however, a memory of an indigenous and austere art, like the painting of Fabius, Pacuvius, and Ennius; but "postea non est spectata honestas manibus" (Pliny, *Naturalis Historia*, XXXV, 20). Seneca (*Epistolae*, 88, 8) and Plutarch (*Pericles*, 13) state

that admiration for a work of art does not imply esteem for the artist who created it (R. Bianchi Bandinelli, *L'artista nell'antichità classica*, AC, IX, 1957). Pliny mentions as painters and sculptors only plebeians and freedmen, and the same information can be drawn from inscriptions.

The condition of the architect, however, was quite different, for he possessed not only a technique but a vast fund of scientific knowledge. Judging from the inscriptions, architects were as often Roman citizens as freedmen. Only a very few appear to have been slaves. The treatise of Vitruvius confirms the social superiority of the architect, who directed and coordinated the decorative work of painters and sculptors as well. The preeminence of the architect and the subordination of the visual arts to his leadership is indicated also by the *edictum de pretiis* of Diocletian (A.D. 301), which established a hierarchy of artistic work: the wages of a painter of figures (*imaginaris*) were twice that of a decorator-painter (*parietarius*), and the latter was better paid than a mosaicist who made pavements (*tessellarius*) or a mason. The increasing diffusion of Greek culture and the ever-expanding opulence of the Roman way of life tended to soften the rigor of the attitude toward art: Nero tried both painting and sculpture (Suetonius, *Nero*, 52), Hadrian was a painter, a sculptor, and an architect (Aurelius Victor, *Epitome*, 14, 2; Dio Cassius, LXIX, 4); but these and other phenomena of dilettantism reflect rather a critical than a creative attitude toward art, and Seneca could continue to call artists "ministri luxuriae," while Martial ridiculed the amateurs of art.

The strong link which existed between structural and decorative works in Byzantine art shows that the organizational framework of artistic activity was still that of the late empire: at the head of the organization was the *praefectus operis*, who coordinated the work of the *artifices* or *magistri* (painters, blacksmiths, carpenters) and the *opifices*, *exactores* (workmen). The work was therefore collective and anonymous, even if its beauty came to be praised as something divine.

The debate concerning beauty and art continued throughout the Middle Ages, but it was always maintained on a high speculative level and touched only indirectly on the social position of the artist. The artist (*artifex*) was above all a technician (and this is proved by a wealth of technical literature and manuals giving a clear idea of the limits of the artist's education); the content and themes of his work were dictated by the *docti*, who in turn depended directly on the imperial court or the Church (E. de Bruyne, *L'esthétique du Moyen Age*, Bruges, 1947, p. 56). The conflict between these two supreme authorities, which became acute with the theological and political struggle regarding the holiness of images, involved also problems of artistic representation: if all art is always at the service of religion, then the idea of religious sovereignty, completely independent from political authority, encourages artistic activity by members of religious orders. The fact that certain orders elaborated new types of church architecture and that the copying and illustration of manuscripts (see MINIATURES AND ILLUMINATION) was for the most part the work of monks is doubtless a preliminary indication of a shift of art activity to a higher social level. Nor is this contradicted by the concentration in monasteries of other handicrafts such as enameling and goldwork (at St. Riquier in the 9th century there were workshops for founders, armorers, saddlemakers, and weavers).

This conflict between art that centers on imperial sovereignty and art that follows the rules of the religious community and tends to oppose the religious function to that of the court continued for some time in the West. Charlemagne and succeeding emperors up to Frederick II had a defined artistic policy: they encouraged a "classicism" which undoubtedly helped to raise the position and dignity of artists.

With rapid urban development, the birth of communal authority, and consequently the growth of an artisan economy, commerce, and cultural exchanges, a completely new situation began to emerge in the 11th century. Almost all the artistic professions produced, at their topmost level, works of the highest quality; the cathedral and the town hall are the end result of all those activities, the products that the community creates for itself and that in quality symbolize its highest tech-

nical achievement. The artisans organized themselves into guilds (see HANDICRAFTS; INSTITUTES AND ASSOCIATIONS), the statutes of which aimed above all at guaranteeing, by the probity of the work, the artistic quality of the product. The artists still received their instructions from the *docti*, because the work of art continued to have a religious function, but they were free within the bounds of their technique and their organization to shape their own working conditions. The relationship between artists and patrons had become one between the community and certain of its members who had specific skills.

The administrative organization for the building of a public edifice grew more complex: the chief of the work (*magister lapidum*) was responsible for the progress of construction to a group of citizens (*fabbricieri*) or to their delegate (*magister operis*). The competence of the *magister lapidum* was essentially technical as distinct from administrative, including responsibility for the supply of materials and the recruitment and payment of labor. Working on the building site, or more or less connected with it, were stonecutters, carpenters, lapidaries, sculptors, painters, glassworkers, and others; but the harmonious completion of the building and its furnishing also involved the collaboration of goldsmiths, enamellers, tapestry makers, and carvers in wood and ivory who worked in their own shops, often in distant cities.

Gothic art (q.v.), as the result of combined crafts, may be considered the expression of a technical civilization that constantly aimed at outdoing its own achievements, at attaining positive progress and attacking problems soluble only by the artist with the knowledge and experience he possesses. Thus while production became increasingly technical, technique ceased to be mere manual or instrumental experience; the architects of the Gothic cathedrals were frequently mentioned or represented as scholars or scientists. And as art developed its own problems, it came to be on an equal footing with the other branches of knowledge. It maintained its contacts with religious authority and continued to express religious ideals, but these had become the religious ideals of a lay and independent community, in which artists had a clearly defined function.

It is well known that in the history of Western civilization the Renaissance was the time when the artist attained the highest cultural and social prestige; the time, that is, in which the technical independence achieved in previous centuries became cultural autonomy and, indeed, leadership. Art was no longer merely the highest form of production; it entered into a scheme of general ideas dominating and directing all productive activities, without, however, interfering with their practical execution.

In the 14th century the relation of art to science, philosophy, literature, and even religion was one of subordination. In the Renaissance this relationship became one of equality. By solving his own formal problems the artist simultaneously solved the great cultural problems of his day. Nor is this all. At a time when classical antiquity was regarded as the chief historical source of modern thought, the artist, familiar as he was with the artistic heritage of ancient culture, became the specialist, the connoisseur, the accredited historian of classical antiquity. For this reason too, the presence of the artist in society acquired a new meaning: he took personal part in the discussion of great philosophical issues, sometimes encouraging the development of progressive ideas and becoming their first exponent, sometimes obstructing them, as if to preserve the memory of antiquity. Leonardo was in the avant-garde in the fields of both art and science; Michelangelo had his own philosophy, Neoplatonism, and directed all his work toward a synthesis of antiquity and Christianity; Raphael showed in the clarity and balance of his forms the fullness of the divine revelation in creation; Giorgione and Titian propounded in art, and on a broader plane, the problem of language that was being debated in contemporary literature. Dürer and Cranach did not hesitate to take the side of the Reformation, and Bruegel reflected in the mirror of his irony and skepticism a well-defined religious and political alignment. The familiarity of artists with sovereigns and popes, their intellectual intercourse with philosophers and men of letters, are only the most obvious signs of the influence of art and of the new function assigned to it in the

realm of the gnostic, religious, and moral concepts which direct social life and to which art gives visible shape.

The methods of production and teaching of art reflect the same changes. In the 15th century, painters' and sculptors' workshops still accepted orders for works of handicraft; in the next century they refused them. In the 15th century the workshops' assistants were still apprentices and workmen, who learned their trade by cooperating with their master; but a century later they were pupils to whom the master indicated a line of study and suggested models and whom he taught to look at the art of the past and at nature.

Even heavier responsibilities rested on architects, since they were expected not only to have a first-class technical competence but also to solve essential problems of town defense—for example, Sanmicheli, who abandoned the "tactical" defense of Verona by means of walls and bastions, to set up instead a strategic system of defense at a distance (the so-called "quadrilateral"); Domenico Fontana, who, commissioned by Pope Sixtus V, transformed the town planning of Rome; and, in the 18th century, Vauban, the military engineer who profoundly influenced the development of French cities by building coastal strong points and a network of strategic roads.

It is often said that after the Council of Trent the Roman Catholic Church attempted to subordinate art to its own religious sovereignty by imposing on it severe limitations and reducing it to a weapon of propaganda; and this is partly true. But if we consider that the greater number of theoretical formulas on art, and the most rigorous ones, were also produced in the second half of the 16th century (see MANNERISM), it becomes clear that art had, and reasserted, its own autonomy, and the so-called "subordination" to the Church was actually an alliance which the Church sought in order to carry out its own defense and propaganda.

The academies (see INSTITUTES AND ASSOCIATIONS) which took the place of the old fraternities of artists were now free associations of professional men; they were no longer concerned with the social protection of the artist, whose "bourgeois" status was now established, and they had instead a typically cultural character and function. At the same time the endless series of treatises on architecture and their fresh editions and translations show how a knowledge of the formal problems of architecture and of the principles of architectural "dignity" had become a normal part of upper-class education.

In the 17th century art had precise ideological content and functions; and since it aimed at communicating rather than demonstrating, artists instituted the widest possible search for means of communication, of persuasion, and of arousing emotion (see BAROQUE ART). And not only was the field in which these were practiced to be as wide as possible, but the bourgeoisie, which was preparing to become the leading class, became a patron at least as important as the Church and the court.

This wider range of interest naturally modified profoundly the social functions of art and the artist. Even the large historicoreligious works, with their marked rhetorical character, could only be conceived if meant for a public which, in the mind of the artist, would be dazzled and moved like a theatrical audience; and since historical events or conceptual allegories could dazzle and move only through the artist's handling of the theme (which was generally already familiar), the result was that the personality of the artist became interesting in itself. As in the Middle Ages a work of art was a product of quality—that is, above the average—so now an artist must be a human "exemplar" above and beyond the average: one to some extent exceptional, either for his brilliant social aptitudes, as with Rubens (q.v.), Van Dyck (q.v.), and Velázquez (q.v.), or, on the other hand, for his aloofness or outright rebellion against social conventions, as with Caravaggio (q.v.) and Rembrandt (q.v.).

As patrons the middle classes encouraged the development of domestic art, preferring simple, familiar themes and motifs: landscapes (see LANDSCAPE IN ART), objects in daily use (see STILL LIFE), scenes from everyday life (see GENRE), or the features of those they loved (see PORTRAITURE). The bourgeoisie did not, however, seek a faithful reproduction of those intimate

and domestic motifs; they wanted an "artistic" reproduction: that is, they wanted to see things as they would be seen by the "genius" or the "taste" of the artist, by very definition a particularly sensitive and emotional human being. Thus, by having his own modest experience reflected in the mirror of art, the "average" middle-class man raised himself to a higher level and learned how to give his own life a "spiritual" tone or a touch of genius.

This wide-ranging educational function of art corresponded to the specialization of the artist and the formation of as many philosophies of art (see PHILOSOPHIES OF ART) as there are themes and motifs in art (landscape, still life, genre, portraiture, etc.). This specialization was often carried so far that the painter of landscapes or of interiors turned to the portrait painter for his characters; the painter of historical scenes availed himself of experts for his perspectives and of flower specialists for the garlands which framed the figures of the Virgin and the saints.

At the same time, not only did the increasing development of the market liberate the artist from the bondage of direct commissions and make him a free professional man, but through this market the artist himself could influence the public and direct the demand. Nor did this diminish his own representative function: if the Church was no longer the most important patron (and in fact, some of the reformed churches decidedly rejected the collaboration of artists), on the other hand the presence of the artist at court became more frequent and almost imperative.

The functions of a court painter or architect might be limited to the execution of a few portraits or designs, or they might be stretched to include the management of the royal porcelain or tapestry factories, advice on all matters involving decoration, or even the direction of ceremonies, festivities, and court life. The artist, however, remained a professional man, a permanent consultant chosen by reason of the particular nature of his activity and expected rather to mold official taste to his own ideas than submit to the directions of the sovereign.

As for the teaching of art, this showed an increasing tendency to shift from the private workshop of the artist to the academies (see INSTITUTES AND ASSOCIATIONS), which in turn became public institutions, protected by the sovereign and financed by the government. The academy, in fact, was based on certain fundamental principles: (1) the study of ancient and modern classics, fundamental to art instruction, entails an equipment of originals, copies, casts, and prints such as only a public institute can supply; (2) proper teaching implies specialization in several fields and thus requires a division into sections (human figure, landscape, perspective, etc.); (3) in view of the social standing of the artist and the type of his professional culture, the teaching of art cannot be separated from the teaching of humanities. The professional character of the artist thus tends to merge with that of the teacher.

Simultaneously with this complete emancipation of the artist from the patron and even from the art dealer came the first great art exhibitions (see EXHIBITIONS), ensuring free intercourse between artist and public and helping the public to find its bearings and make its choice in a vast panorama of artistic values whose variety and legitimacy are both recognized.

The inclusion of art among the free professions seemed to have finally established the social position of the artist; but during the 19th century this position became dramatically independent. Since the 18th century the religious-ideological function of art had been altering, and as an *esprit de finesse* prevailed in all cultural spheres, art also had turned its attention on various occasions to criticism of society and customs. This attitude was also favored by the liberal ideas of a middle class which, having based its own philosophy on criticism, could not take umbrage at being mildly admonished or rebuked. But the witty social criticism of a Hogarth (q.v.) or, in Italy, of a Pietro Longhi (q.v.) became rebellion, strife, and tragedy in a Goya (q.v.) or a Daumier (q.v.).

The political ideology which took the place formerly occupied in art by religious ideology involved the artist in a far more direct commitment, since the fruits of action were to be gathered in this, and not in a future, life. Thus even classicism

became an incentive to political passion in a David (q.v.), the first artist to put himself at the service of a specific political ideal and to invest his art with the task of propaganda and political strife. After him, romanticism (q.v.) reasserted not only the ideological mission of the artist but also his necessarily revolutionary position; in fact, as the man who must stimulate the progress of society, the artist should remain to some extent outside it and, if anything, should censure and scorn it rather than blandish and support it.

On the other hand, the rapid development of industrial production caused a crisis in craftsmanship, and the artist's share — indeed, every esthetic contribution — seemed forever banished from the new mechanical products. Art, which had first cut itself off from official religion and was now severed from the economic world, was bound to involve itself deeply in the struggle of ideas. At the beginning of the 19th century David was still the high priest of a revolutionary faith; by the middle of the century Daumier turned acid political satire into great art, and Courbet (q.v.) was a leader of revolt in art as he was in life.

The isolation of the artist from society and his conflict with it, which became more acute in the second half of the century, did not, however, imply that the artist and society were not interested in each other. The difference between them certainly gave rise to serious misunderstandings; middle-class society loaded with honors the "official" or "academic" artists, who were frequently the worst, and left the real artists to die of starvation, only to exalt their memory when at last their message was accepted. The tragic destiny of a Van Gogh (q.v.) or a Gauguin (q.v.) and the struggle of the impressionists (see IMPRESSIONISM) and later of the expressionists (see EXPRESSIONISM) against a hostile public are flagrant examples of this.

But the debate was not always conducted on an explicitly ideological level, nor did it always arise from political or social strife. More often, especially since the impressionists, the questions have been specifically esthetic. The impressionist painter who declares that he is not concerned with content or subject but wishes only to capture and portray his own sensations when confronted with reality implicitly affirms that sensations or emotions, in their immediacy, are more important in men's interior lives than passively accepted ideas and beliefs; and that, finally, life is a continuous experience and will therefore be the more free and authentic as the experience is more immediate and unconditional. In other words, if esthetic experience is considered as the most direct experience of reality, esthetic values as such acquire a fundamental importance in the general picture of the essential human and social values.

Thus the modern conflict between artistic movements, although usually expressed in purely artistic terms, always implies a more or less open and conscious conflict between ideological positions. These, in fact, sometimes take the form of a polemic against all formalism in the name of explicit theories, sometimes that of well-defined ideological motivations advocating innovations in form. Examples of these can be found in the recent work of Picasso, which has been inspired largely by a horror of dictatorship and war; in the social protest of the German expressionists (see EXPRESSIONISM); and in the religious exaltation of Rouault.

The necessity of healing the breach between art and production that had been opened by the crisis in craftsmanship caused first, with the polemic of William Morris and the Arts and Crafts group, an attempt at rehabilitating craftsmanship by restoring to it the whole of the artist's sphere of activity (see PRE-RAPHAELITISM AND RELATED MOVEMENTS); then, in Germany, the *Werkbund* movement, which aimed at bringing the artist back into the circle of industrial production, as the creator or inventor of forms for mechanical production; finally, again in Germany, the activity of the Bauhaus (see GROPIUS), which tended to give the artist a definite position in the world of industrial production, as designer and specialized technician (see INDUSTRIAL DESIGN).

This new relationship of the artist to industrial production, which tends to deprive him of his traditional status of painter, sculptor, etc. and to classify him instead as a technical

designer, has been realized particularly in the fields of architecture and town planning (q.v.), where the productive process is ever more industrialized. However, it should be remembered that in modern art this trend toward a rigorous technology does not entail a decline of esthetic or ideological interests. On the contrary, these various movements have the common purpose of achieving a high esthetic standard for industrial products and of propagating on all levels those esthetic values deemed fundamental for the education, functioning, and progress of society — indeed, of giving them a currency as widespread as that of industrial products. More specifically, according to the ideas advocated by these modern movements, the artist, by working toward high esthetic standards for industrial products, would give industry a moral standard also, freeing it from the rule of capitalistic interests and making of it a productive activity of the community for the community.

The modern interpretation of the artist as a creator-technician is not, however, without opposition: one theory, in fact, maintains that the artist must of necessity commit himself on the political and ideological level (socialist realism) and thus assume the specific task of ideological leadership of the masses; another holds that art is absolutely independent of any social interest (surrealism and other abstract trends). Some modern movements (nonobjective art, for instance) see the work of art as a mere sign or testimony to the existence of the artist, in accordance with existentialist thought; thus they tend to oppose the technology of "design" and insist on complete autonomy for art: an autonomy which is not even rebellion or struggle but total "extraneousness" from society.

Society's evaluation of art works. Once completed, a work of art which up to that moment had existed only in the mind of the artist begins to live for the world. It fulfills a specific function, but it is also the object of an esthetic evaluation, it provokes a series of reactions, it exerts influence and undergoes changing fortunes. The evaluation to which it is subjected applies above all to its appropriateness for its function and to its esthetic quality — that is, to the two interests which should coexist in the intention of the artist. When the judgment is confined to the functional aspect, it is because the esthetic result is considered to be implicit in the practical result; and when the judgment concerns only the esthetic aspect, this is a sign that a definite social function (for example, an educational function) has been ascribed to its esthetic quality as such. The first judgment passed on a work of art is that of the artist; his decision that it requires no further work is at the same time a recognition that it is complete and cannot be improved. That judgment recognizes both its adequacy to its function and its esthetic value; that is, the work is considered to be adapted to a contingent necessity and of a quality superior to the practical demand. This consciousness of a permanent or esthetic value in a work of art designed for an immediate purpose is demonstrated by the fact that the artist himself, while choosing the most appropriate materials and the most rigorous methods of production, nevertheless intended to endow his creation with a value that would outlive the reason for its conception. Only in certain cases does the artist consider his work ephemeral: for example, when he sacrifices value to effect (scenography and ceremonial equipment), or when a predominant topical interest (see ROMANTICISM) subordinates the esthetic value to the appropriateness of a work to a given historical point of view.

The judgment of the artist is founded on the relative success of the method of operation; indications of the judgment, or of successive judgments formulated during the execution of the work, are to be found in the "regrets" or "changes of mind," traces of which can frequently be found in the object. All subsequent criticism of the work, whether expressed in word or in action (see CRITICISM), follows that judgment more or less directly. However, criticism applies less to the operative procedure than to the question of value as the distance lengthens between the creator of the work and the critic. The artist judges according to his own procedural concerns, while the political or religious man will criticize from a moral, educa-

tional, or ideological point of view. That these extra-artistic appreciations of works of art not only favor the assimilation and circulation of the work in society but become an integral part of art culture is demonstrated by the influence they have exercised at all times on the character of artistic phenomena.

a. Replicas, copies, reproductions, means of study and documentation. The most immediate reaction to a work of art is demonstrated in the tendency to copy or reproduce it. This tendency is not opposed to the conviction that artistic value is unique and not to be repeated; on the contrary, it is proof that quality must be subject to quantity in order to reach the common experience. This first and most direct influence of a work of art operates at the start on the creative plane, not uncommonly beginning with the artist himself. Thus we often have "replicas" which may be, in whole or in part, by the original creator or from his studio, with or without modification. Replicas by the artist himself may be inspired by a wish to probe more deeply into his original conception, to revise it, or to express it in fresh terms; when this is the case, the replica may have the same value as the original or may even, despite the external similarity, assume the intrinsic value of a distinctly new work. But there is also the possibility that the artist himself, in making a replica or a close approximation, may as the result of a mechanization of the creative process produce a mere copy.

"Copy" does not imply, as does "replica," the intention of repeating the value of the original. A copy is purely mechanical in intent and is sometimes debased to the point of dull iconographic repetition, intended only to serve such a practical purpose as the widespread reproduction of a portrait or of a sacred image. There are, however, other types of copies which aim at a stylistic interpretation of the original, and these have value at least as manifestations of a critical attitude and sometimes even as true works of art. There have been entire periods in the history of art (the dependence of Roman on Greek art immediately comes to mind) when copying was equivalent to the acquisition and assimilation of another culture. In such a case, the effort of the artist involved the realization of an esthetic value (as every copy, in fact, "realizes" the original) along with its adaptation from an original function to a new function. Copying, like the interpretive reading of exemplary or interesting books, has always been considered the best method of formal learning. Quick, interpretive copies that are selective of the values of the original (such as those of Rubens or Van Dyck or, among the moderns, of the French impressionists) are not only acts of homage to ancient masters and often so inscribed, but tend to demonstrate the immediacy of certain problems and the points of derivation, agreement, and dissociation between modern and ancient art. Even attempts to imitate the style of earlier works prove that it is possible to revive iconographic and formal themes of the past in contemporary visual terms, or rather, that it is possible to retrace the various phases of optical theory in the history of art. (For example, the derivation of much of Picasso from Holbein and Courbet is clear.) This process is analogous to that encountered in music when ancient themes are transcribed and orchestrated for modern harmony and instruments.

There are also the innumerable derivations from originals, which include the most banal adaptations. These are interesting, even if they demonstrate a progressive exhaustion of all value, because they reveal how the heritage from a master can often be reduced to the merest hint of the originals. On the highest level are faithful copies, regardless of change in dimensions or materials (e.g., marble sculpture reproduced in bronze, paintings in mosaic or in tapestries or in sculpture, architecture in gold or ivory). From this highest level the descent goes through an infinite gradation of repetitive objects to the most banal, faded, and careless reprints of once-artistic images, made for devotional purposes, propaganda, ornamentation, and advertising. The unlimited ways in which this diffusion of images is carried out shows how much society, everywhere and always, owes to art the graphic expression of its major and minor myths and the heritage of images that convey its environment and its visual concepts.

The subject of "fakes" is also complex (see FALSIFICATION AND FORGERY). To begin with, this, too, involves a critical evaluation, a clear awareness that the monetary value of work of art increases with age, and an admission that a frau cannot match the artistic value of an original except in a illusory fashion. There are cases of total and of partial falsification (for example, heavily damaged works which have been artificially reconstructed or reintegrated). There are cases of intentional and unintentional faking (for example, a modern copy made in good faith as an exercise or study but offered as authentically antique by a dishonest dealer). There are technical reproductions (mechanically copied) and stylistic falsifications (which only approximate the taste and the technique of the original); and there are derived falsifications (making use of an original or a combination of elements from several originals) and invented falsifications. From a legal point of view the concept of "fake" is defined in terms of intent to defraud but from a critical point of view buildings and interiors constructed in "period" styles and overdone restorations of monuments must be considered falsifications.

"Reproductions" made and disseminated for practical, devotional, or educational purposes are also common. There are mechanical means of reproduction: for sculpture, the casting of copies from original molds; for metals, electrolysis; for painting (as for all other arts), photography in black and white or color. Engraving cannot be considered solely mechanical although at times it renders a remarkably faithful reproduction of works of art, especially painting. It was widely employed as a technique of reproduction prior to the invention of photography, but it was born and developed as an autonomous artistic process and was often utilized by major artists (for example Bruegel and Hogarth) for the reproduction in popular edition of their own works. It was also used (for example, by Agostino Carracci) as a means of analyzing works of art rather than as a means of reproduction. Even in the most accurate and faithful prints it is always possible to discover an inherent judgment in the accentuation of certain characteristics of the original. That fact could not but have great influence on taste, because of the widespread diffusion and adoption of prints among artists for study, almost as a key to stylistic interpretation of the masters. If one considers the careful and studious outlining and crosshatching with which engravers reproduced the values of light and shade, color, and tonal relationships of the originals the importance of these tonal interpretations of the classics or the painting of the 17th and 18th centuries, which was preeminently tonal, can be appreciated. Analogously, the linearity of engraving, which emphasized the purity of line and the modeling of the works of classical antiquity, contributed at the beginning of the 19th century to a "purist" interpretation of ancient art. (See ENGRAVINGS AND OTHER PRINT MEDIA.)

Even modern reproductions, although produced by mechanical means for purely documentary purposes, reflect an interpretation of the original. Black-and-white or color photography (see PHOTOGRAPHY) demands on the part of the photographer a judgment of tonal relationships and of the quality — thickness or transparency — of painted surfaces. The choice of details, moreover, requires careful scrutiny. When there is more than one angle of vision to be considered, as in sculpture or architecture, the photographer, in order to determine the proper position, distance, and lighting, must evaluate the plastic quality of the work, since he must, for the sake of objectivity, avoid equally a vague, characterless image and an arbitrary, unusual, or tendentious interpretation.

Motion pictures (see CINEMATOGRAPHY) are widely employed as a means of documentation and are a powerful aid in the formal analysis of a work of art. By presenting an art work as a coordinated and dynamic succession of images of varying intensity, dimension, and duration, a film supplies an interpretive view of the work that is all the more comprehensible because the visual sensitivity and associative processes of modern man are strongly conditioned by cinematographic narrative. For the study of architecture especially, greater interest is provided when the movement of cameras and construction of sequences give the spectator a vivid sensation of three-dimensional move-

ment and of the space that is inhabitable and functional. But together with the effectiveness of films there are corresponding dangers, for the operator can easily produce superficial, acritical, or arbitrary interpretations, as happens, unfortunately, in many documentaries turned out by the motion-picture industry.

b. Art, production, custom. In a wider sense, and in a way that is not directly linked to individual works of art, artistic activity influences a vast series of social phenomena and shapes the taste and style of an epoch. The recurrence of related characteristics (certain types of representation, even such motifs as lines and curves, color combinations, and proportional relationships) permits us to recognize as contemporary products of the same culture such varied objects as furniture and jewelry, fabrics and ceramics, glass, coins, arms, and clothing. Each phase of an art culture, in its attempt to set forth its own contemporary values, reactivates on the level of its own esthetic interests those elements of the past for which it has an affinity; in this way it shapes a trend in taste related not to individual works of art but to the general character of the entire range of production. This explains the rapid diffusion in ancient Rome of the tastes and customs of Greece and the Orient; the conformity of 15th-century styles of furnishing and fittings to Gothic and then classical architectural schemes; the mania for *chinoiserie* in the 18th century; the formation of the Empire style under the influence of the archaeological discoveries of Pompeii and Herculaneum. Often historical research in art develops along lines laid down by aggressive contemporary art, but only by extension can valid analogies be drawn from such comparative studies (e.g., "impressionism" applied to Hellenistic art or "expressionism" to Gothic art). They are, however, indicative of a necessity to relate ancient artistic experience to present problems of expression. An important side effect of the influence of art culture is fashion, which constantly takes inspiration and form from figural art but also in turn furnishes the artist with a pretext for demonstrating that his own artistic vision is up to date.

The natural means for the spread of art through society are commercial activity and the techniques of production. In cultures that make no qualitative distinction between art and handicrafts, except one of degree, the diffusion of styles takes place spontaneously. But when crafts are placed in a decisively inferior position, unrelated or only indirectly related to artistic production, "pure" artists assume a position of direction on a high level, and any contact is in the form of mere imitation. This break, which to writers such as Ruskin and Morris indicated a crisis in art and in society itself, is a complex phenomenon. At the time of the Renaissance, artists detached themselves from the world of the artisan and destroyed that unity of the two groups which in the 14th century seemed still to be complete. It is also true, however, that handicrafts have deteriorated in quality to a degree not compensated for by the fact that many artists, risen to a rank equal to that of literary figures and scientists, continue to supply models and designs for artisan production.

But there are two facts of fundamental importance which must not be overlooked. First, artists often work out a new technique, essentially theoretical or of a methodological character, which subsequently is recognized as a technique or a specific process born of inventive genius. The influence of artists on usage is thus exercised on a different level, where that which is demanded is not so much "*recta ratio factibilium*" as it is inventive ability dedicated to the solution of mechanical problems, to the construction of fortifications, to the study of urban planning, and, not less important in certain societies and ages, to the preparation and direction of festivities, ceremonies, and theatrical spectacles. Never did art have a greater influence on the practical activities of an epoch than during the Renaissance, and not only in Italy. As almost a technique of research, it participated directly in the scientific study of human and animal anatomy and botany (see HUMAN FIGURE; ZOOMORPHIC AND PLANT REPRESENTATIONS) and in the study of geology and hydraulics; it examined and graphically resolved complex mechanical questions; it modernized methods of offense and defense

(see ARMS AND ARMOR); it offered means for the representation of the physical universe (see COSMOLOGY AND CARTOGRAPHY); it established a relationship with historical, documentary, and philosophical research; and it intervened in doctrinal debates.

The second fact is that artisanship, which takes its models ever more indirectly from art, develops, on its own part, techniques of imitation, which improve mechanical processes and organizational systems so that, even if it no longer achieves esthetic perfection, it enormously increases the range of the economy. Its forms are only a vague repetition of the rhythmic forms of art or a facile generalization of them, but its drive toward expansion is a basic factor of industrial technology.

In the 17th and 18th centuries in France, the absolute monarchy placed certain artists at the head of what had become industrialized activities (for example, the royal factories making tapestries and majolica) and made them the supreme arbiters of taste for the court and for those social classes which gravitated to it. But the important fact is that these artists were responsible more for questions of taste than for technical direction; and thus quite often technical discoveries brought about changes in the process independent of the desires of the artist (for example, the treatment of kaolin to make porcelain). Sometimes painters and sculptors, perhaps of modest ability, took service under the direction of technicians and were subordinate to them, as happened with the modelers of the porcelain factories, the designers and cartoonists of the tapestry factories, and the engravers of the mints. At the same time artisans of quality, such as Boulle, achieved a rank not inferior to that of artists and organized their production according to criteria that anticipated those later employed in industry.

The so-called breach between art and production, which was evident and serious from the second half of the last century, was due not so much to the irreconcilability of artistic ideation with mechanical execution as to the fact that the rapid development of mechanical methods, the establishment of capitalism in industry, and the growing demand for products brought about an exclusively quantitative development of production and eliminated the traditional role of the artist as the man of ideas and the creator of models. Moreover, a model created according to traditional artistic techniques can be transformed into an industrial product only at the cost of alterations which disfigure it.

Modern attempts to heal that breach, to reunite art to production, and to develop the influence of the esthetic factor throughout society by means of the limitless diffusion of industrial products, do not aim at restoring to the artist the guidance of public taste; rather, it is hoped to recover for the artist the position of technical director of production invested with the function of designer (see DESIGN). In this way the same relationship, based on the continuous circulation of ideas and the full exploitation of experience, which existed between art and handicrafts in the Gothic period tends to be established between art and industry. In fact, the effective social integration of Gothic culture is often taken as a prime illustration of the aims of the pioneers of the modern movement.

c. Dealing and collecting. Society tends not only to assimilate and utilize the values of art but also to take permanent possession of the works themselves. Above and beyond the expiration of its immediate function, then, a work of art retains an esthetic value that is recognized as being of public interest. The economic motive — that is, the recognition that the work of an artist may augment or even substitute for the value of a precious material — is not the only cause of the associated phenomena of dealing (see DEALING AND DEALERS) and collecting (see MUSEUMS AND COLLECTIONS). These two phenomena, as aspects of the evaluation of art or of a critical attitude (see CRITICISM), depend above all on the consciousness that artistic value, in a universal sense, is of interest to the community, and consequently that private individuals or social classes or state authorities or safeguarding institutions will tend to hoard or collect such valuables. This is confirmed by the facts that (1) the interest in possessing works of art, at first exclusively

concentrated in the *polis*, or state (Roman governments made collections of works of art in the temples), or among sovereigns and the highest religious authorities, expanded with the increase in the number of social classes that participated in directive authority; (2) even at the time of the Renaissance, art collections contained not only contemporary or antique works of art but also natural curiosities, scientific apparatus, manuscripts, etc. — that is, all the instruments of a culture that was considered a privilege of the classes in power and a means for the exercise of authority; (3) there is an incontestable tendency of art collections (particularly in democratic nations) to return to the community and to become public property.

The relationship between the artist and the person or organization which aspires to possess his work can be based on direct commissions, on long-term employment (see *PATRONAGE*), or on the market. The private individual tends to establish with the artist a relationship analogous to that which he maintains with other exponents of the civic and religious life of the community. He entrusts to him the construction of a building which will be testimony of his rank and financial power. He commissions him to build the family chapel or tomb, which are the temples of domestic religion, or he charges him with transmitting to posterity in bronze, marble, or paint (see *PORTRAITURE*) his own image or that of members of his family, almost as if he wished to create a document of family history that would also be of general interest. When this relationship is transferred to the higher level of patronage, the private individual is acting in the name of the community as sovereign, pontiff, prince, or other official who considers himself invested with public responsibility. In fact, he no longer limits himself to the single commission or the acquisition of one object but ensures himself a monopoly of the works of one or more artists; and, if it serves to increase his own prestige, he will eventually donate those works to the city or to the state.

Collecting and dealing, related phenomena and almost produced one by the other, are not merely by-products of art culture; often they stimulate and influence its development. By means of relationships and exchanges between diverse cultures, operations of selection and coordination, which imply critical judgment, are brought into play, and a clear formulation of criticism results. Both collecting and dealing are concerned with the evaluation of works of art, because in a well-chosen collection a single work assumes a value (including the monetary) from the fact that it is a part of a selected series; in other words, it adds to its own light that reflected from the masterpieces among which it is found. At the same time the market affects the value of works of art by sagacious maneuvers of depression or inflation; by the exploitation and clever propagation of fads; by publicity based on shows; by the judgments of artists and experts; and by studies dedicated to guaranteeing the authenticity, rarity, attribution, or dating of the object.

d. Preservation of the art heritage. The community in its various forms — church, state, or city — has always been profoundly interested in art and has generally expected it to make manifest or to glorify by means of symbols, allegories, or historical representations the great abstract ideas on which its own organization is based, the persons who hold supreme power, and the history which makes up its tradition. In this way the concept of "art heritage" and the related concept of "artistic policy" come into being; and these concepts are equally important in a positive and in a negative sense. The negative aspect (but one which certainly indicates awareness of the importance of art in the community) is the inveterate, unfortunate, and willful tendency of conquerors to destroy the monuments of subjugated peoples — almost as if the intention was to strike them at the most vital and creative roots of their civilization; to carry off as trophies of war their noblest works of art; and to declare the conquered nation unworthy of possessing valuables of universal significance. There is a burning memory in world history of such destruction and theft, recorded as custom and almost a prerogative of war from the time of the first chronicles or histories. Such practices, sharply condemned by Cicero in his orations against Verres, continued down to the Napoleonic

pillage and even the destruction and plundering of the last world conflict.

In so far as they commission works of art, community organizations operate in accordance with their concept of their own political function, to such an extent that the history of art concepts might be traced in the history of art: sometimes in the construction of great religious or civil buildings or commemorative monuments which exalt certain ideals or notable events; sometimes in the commissioning of large pictorial decorations; sometimes in urban regulation or development (see *TOWN PLANNING*); and on occasion in the large-scale encouragement of the free artistic professions. If the restrictions imposed on art in the name of particular religious, moral, or political ideas have often in the past and always in recent times ended in sacrificing authentic art to an "official" art which is without value, these same restraints demonstrate that no regime or no type of political organization can ignore art — they must have an art as they must have a philosophy. The profound difference between the action of an authoritarian regime and that of a democratic one consists principally in the fact that the first, working on the assumption that the state is the reason for all activities, controls the themes and the styles of a culture; whereas the second, conceived as a coordination of free activities, limits itself to guaranteeing the participation and functional role of art in the scheme of cultural and productive activities.

The ancient idea, only recently translated into legal terms, that works of art are public property was born from the interest that the organized community showed in art; whether the works are owned by the state, or by private institutions, or by individuals, it is felt that they constitute a community heritage. But the concept of "art heritage" is inseparable from the nature of the community that holds it, and thus it is characterized as "national" or "regional" or "municipal." This concept is applied not only to works produced by national, regional, or municipal artists but to all manifestations of art developed within the bounds of the community, and the heritage should be understood as being always open to contemporary and future developments, above all for the prime examples of the art production as they come into being.

Among the functions of the community (whether it is represented by administrative bodies or by groups of citizens) regarding the art heritage are (1) conservation of monuments and works of art of the past; (2) enlargement of public collections; (3) encouragement of the development of contemporary art; and (4) art education (both as specific or professional study and as general culture). In some countries (particularly in those endowed with a heritage of local antiquities consisting in large part of immovable objects and remains) there is protective legislation. The common principles of such legislation are the right of the community to limit the disposition of privately owned objects of art, the right to establish regulations for their conservation, and the duty of augmenting the national art heritage (see *PRESERVATION AND CONSERVATION OF ART WORKS*). Although international agreements have not been reached in this field, the concept has been established that restitution of national art treasures pillaged by invasion of foreign domination should, after these circumstances have been terminated, be considered in the peace or reparations negotiations. Such restitution took place after the fall of Napoleon and after the World Wars of 1914-18 and 1939-45.

The protection of art is generally entrusted to the direction of specialists, for the most part members or employees of public administrations. A specific work of conservation is required in those countries which have a vast art heritage widely disseminated throughout the national territory, for in these nations fortuitous discoveries are more probable, the necessity of restoration is more frequent, and the risk of alienation or exportation is greater. In addition to promulgating protective legislation, public administrations attend also to the systematic cataloguing of monuments and works of art, to their restoration, to research (see *ARCHAEOLOGY*), to documentation, and to the management of museums and galleries.

The museum is the fundamental institution for the development of art culture (see *MUSEUMS AND COLLECTIONS*). The modern

concept of the museum came into being between the end of the 18th and the beginning of the 19th century, with the modern form of a democratic structure of society. This modern concept is based on the principle that works of art, even after the conditions that stimulated their creation have been transcended and the ideological content which they bear within them has lost its immediacy, still retain an esthetic and historical value, and for that reason have an essential importance for general, and specifically esthetic, culture. Thus society as a whole, by means of the museum, assumes the possession and administration of cultural values previously held by restricted social groups. In countries with an ancient artistic tradition, the museum has above all the functions of conservation and preservation. There is generally a nucleus of one or two royal collections which have become the property of the community as the result of the enfranchisement of the people, and the museum assembles around that original core works of art drawn from such sources as expropriated convents and abbeys, destroyed or deconsecrated churches, dissolved private collections, excavations, legacies, and purchases. In countries with a more recent culture, the museum systematically gathers together indigenous and foreign works and attempts, as far as possible, to form integrated collections. These public galleries generally receive large contributions from private citizens who, having formed important collections of ancient and modern works, donate them to the public by way of the museum.

With the development of art-historical studies, the tendency of museums to specialization, already observable in the small collections formed for study by the scholars of the 18th century, was accentuated. This specialization may set up collections by periods and civilizations (prehistoric, archaeological, etc.) or by types and categories (decorative art, popular art, etc.), so that the work of art as such is isolated, underlined, and historically placed in chronological or analogical series together with other cultural evidence.

e. Teaching. Because it is interested not only in the preservation of its inheritance of art but also in the development of artistic activity, society demands of its artists the formation of new generations of artists (see EDUCATION AND ART TEACHING). This educational function was implied in the cooperative type of operation which characterized even the most ancient artistic activities, as well as in the relationship which existed between master and apprentice in the workshop and between foreman and workmen during the construction of buildings. The method of apprenticeship is transformed into a method of teaching when, moving from the workshop to the "studio," the artist, no longer comparable to an artisan but a man of culture, teaches a style instead of simply a technique.

From the 16th century on, teaching passed into the hands of actual schools, for the most part created and supported by princes or other aristocrats (for example, the Medici school of sculpture in the Boboli Gardens in Florence). In the 17th and 18th centuries the institution of the academy, founded on the principle that art instruction, in contrast with the apprenticeship of the artisan, must be related to the humanities, flowered and became generally accepted (see INSTITUTES AND ASSOCIATIONS). In the 19th century the tendency to reduce art teaching to academic copying of antique originals caused the decadence of this type of education and the rebellion against it of the most gifted and vital artists. And from this was born the return to technical studies, but on a methodological and not on an empirical basis. That there has been a revival of technology in art is shown by the separation of the teaching of architecture from the schools of fine arts and its reunification with higher studies in engineering or its organization into an autonomous faculty, and by the creation, first in Germany and later in the United States, of schools for industrial design which make use of the products of industrial techniques for teaching and spreading the principles of vision and form.

Related to art education is the phenomenon of dilettantism, insignificant from the point of view of artistic values but important as an aspect of social influence on art. This phenomenon presupposes that art has a general formative function over and

above its specific ends; that artistic values can be realized and assimilated by way of imitation; that art is an activity of the cultivated social classes; and that the critical attitude, typical of the lover of art, can be transformed into direct artistic activity. For these reasons dilettantism is typical of those cultures which make a clear distinction between the spiritual character of art and the practical character of handicrafts; and, in fact, there is a crafts level of dilettantism, especially among women (embroidery, rugmaking, and other such recreational activities that hark back to the ancient domestic tasks), as distinct from artistic dilettantism. Among the more elevated forms of the latter are painting as practiced by Chinese and Japanese poets and literary figures and certainly related to professional painting; the architectural dilettantism of the Renaissance, which is explained by the fact that interest in architecture had a classical foundation and was linked directly to humanistic culture; and the analogous phenomenon in the field of urban planning at the end of the 18th century. Among the deleterious forms of dilettantism, important only because of its wide diffusion, was the amateur painting which pervaded all Europe in the 18th and 19th centuries as a direct consequence of English esthetics and of the cult of the picturesque (q.v.).

f. Art criticism and art history. Criticism, as an activity specifically aimed at the evaluation, interpretation, and spread of an understanding of art, has varied forms, including all the different types of reaction by society to the work of an artist. In its effort to determine artistic value, criticism has been assuming more and more in the 20th century a decidedly scientific character; but Richardson (*The Connoisseur*, 1719) had attempted even in the 18th century to define the activity of the connoisseur as a science, assigning to him the task of distinguishing between originals, counterfeits, copies, and school pieces. Recently, of course, this particular activity has been greatly assisted by scientific instruments of research and analysis analogous to those employed in medicine, chemistry, and physics (see TECHNIQUES OF ANALYSIS). These instruments (X rays, spectographs, photographs, microphotographs, microscopes) and other forms of chemical and physical analysis are effectively employed in the work of restoration (q.v.), both in order to ascertain the nature of the materials, the various phases of the technical processes, and the causes of deterioration and to determine which procedures may prove most suitable to reestablish the integrity of a particular work. Restoration is, therefore, a further form of critical activity, because it distinguishes between original and added parts, between integral and altered parts; in addition, it arrives at the most accurate understanding of the whole because it judges a work as a whole and not simply on its representational qualities.

Ascertaining the authenticity of a work of art is not merely a problem of distinguishing between originals, imitations, and counterfeits. Every work of art constitutes a unique element in a complex series of facts; and the authentication of a work involves placing it historically as to period and culture and possibly also in the development or life of the artist. Of paramount importance in this research is the definition of terms applied in various periods and civilizations to the techniques, types, styles, and classes of art products (see TERMINOLOGY). Other indispensable aids to critical study and documentation are vast archives of photographs; inventories of monuments and works of art; catalogues of museums, galleries, collections, and sales; and, in the field of bibliography (q.v.), biographic, topographic, iconographic, typologic, and documentary works, guides to cities, and original source materials. All these special tools, however, should serve only in the preparatory phase of historical work; that is, the verification and correct interpretation of the art works. On this foundation the history of art (see HISTORIOGRAPHY) can be constructed according to the methods and processes common to all historical studies.

Giulio Carlo ARGAN

In the compilation of this article the collaboration of Tullio De Mauro was enlisted for the linguistic treatment, and that of each editorial division of the Encyclopedia for the material within its competence. Within the article cross-reference has been made to each of the other articles of a conceptual or systematic character and to general art-historical articles.

ART NOUVEAU. Name of a style current about 1900 in decoration and appearing occasionally also in architecture (see **EUROPEAN MODERN MOVEMENTS**). The French word is accepted in England and in the United States. Its Italian counterpart is "Liberty" or "Floresale," the former referring to the London store of Liberty, which was associated with the decorative arts in the new style. The German name is "Jugendstil," after a magazine *Die Jugend*, started in 1896 and supposed to favor Art Nouveau in its covers and pages. It is accidental that Mr. Lasenby Liberty's name can be linked with the Italian word *libertà*, but the use of the word *Jugend* (youth) was deliberate. The adherents of Art Nouveau praised its freshness and its freedom from the traditions of the past. Here lies, in fact, its considerable historical importance.

The 19th century had in all countries been a century of historicism. Period styles were imitated everywhere and utilized in buildings whose function did not exist in the ages from which these styles were drawn. Complete independence of period precedent existed only in the works of a few outstanding architects of the later decades of the century. Some of them achieved independence by following unusually simple and unenriched styles and by stressing the simplicity. This is the case occasionally with R. Norman Shaw in England, who sometimes went for inspiration to the English domestic style of about 1700; it is more frequently the case with H. H. Richardson in America (PLS. 83-85) and C. F. A. Voysey in England, who looked to the cottage and manor house of the 17th century.

Other architects, however, went further and tried to establish a corpus of forms such as had never existed before. Here the most important are Sullivan, Mackmurdo, and Gaudí. Louis Sullivan (1850-1924) in his work in Chicago appears strangely ambiguous. He created in his office buildings (PLS. 86, 87) from 1890 onward a new rational and functional system based on the grid of unrelieved verticals and horizontals; this system was carried on in the 20th century, so that these buildings by Sullivan now appear closer to those of Mies van der Rohe than to those of the 19th century. His ornament, as applied especially generously to the interiors of the Auditorium Building of 1887-89, is equally independent of the past but not equally prophetic of the present (PL. 469). It is floral and florid, very close and involved, and ornamented with acanthuslike leaves and volutes. It should be viewed against the background of the English Gothic revival (see **NEOGOTHIC STYLES**) and the English Arts and Crafts movement (see **EUROPEAN MODERN MOVEMENTS**), where also here and there one finds such freedom in ornament, developed from late Gothic and Greco-Roman foliage — for example, in William Burges' own house in London (1875-80) and in designs by such decorators as Walter Crane.

But there was in England in the early '80s one far less famous young architect-decorator who more than anyone else must be considered the creator of Art Nouveau: Arthur H. Mackmurdo (1851-1942). The title page of his book on the city churches of London (PL. 470), published in 1883, is the earliest work of Art Nouveau in existence. It has all the characteristics of the style: it is strictly two-dimensional, it is asymmetrical, it emanates from one corner and spreads and rises in a flame- or wavelike pattern. The origins of Mackmurdo's style are complex, but they can be found. William Blake's work and Japanese woodcuts are foremost among them. Mackmurdo's designs must have influenced the Continent and especially Belgium, although we cannot say precisely when and how.

The greatest architect of Art Nouveau — for in Mackmurdo's and Sullivan's architecture the style disappears — certainly had no early influence outside his own circle: Antoni Gaudí (1852-1926) of Barcelona (q.v.). He started as a faithful believer in the Gothic style, but his own creative fantasy was so prodigious and undisciplined that he soon left behind all consideration of the past. The break appears clearly in the Güell Palace of 1885-89 and was complete with the Chapel of the Colonia Güell of 1898 (PL. 466), the structures in the Güell Park of 1900 (PL. 466), the famous upper parts of the church of the Sagrada Família of 1903 (PLS. 466, 467), and the later blocks of flats from 1905 onward. It is hard to describe Gaudí's style.

It is wild, vehement, and capricious, yet full of power. Forms are reminiscent of those of antediluvian animals or of scrap iron, of coral reefs, of cacti; and stone flows in thick curves like lava. His ruthless originality at that particular moment connects him with Art Nouveau; so do many of the forms he thought out. Yet in sheer force he is superior to all others.

Art Nouveau nearly everywhere has an element of *fin de siècle* — something precious and a little rarefied. Its links with the English estheticism of Oscar Wilde cannot be overlooked. In fact, the illustrator of Wilde, Aubrey Beardale (1872-98), whose brilliant and extremely decadent drawings of as early a date as 1893 were known all over Europe, certainly influenced the Continental creators of Art Nouveau (PL. 470). So, while Gaudí's trend was continued later (independently) by the expressionists (see **EXPRESSIONISM**) and not effectively rediscovered until the rationalist architecture of 1900-40 had reached its peak, there is a direct link from the England of Mackmurdo, Voysey, and Beardale to the centers of Art Nouveau on the Continent. The earliest such center was Brussels, where a house of 1892-93 in the rue Paul Emile Janson (former rue de Turin) by Victor Horta (1861-1947) is frequently regarded as the first example of Art Nouveau (PL. 468). Its exterior, like so many others of that period, is less eloquent than its interior. Here the typical elongated, shallow, asymmetrical curves of a seaweed or other vegetable form flow fantastically on the walls and in the ironwork of the staircase column and handrail. Horta liked iron, which for quite different reasons the engineers had adopted as a building material. Viollet-le-Duc, whom he admired, had already combined an interest in iron as a new structural material with an interest in its decorative possibilities (*Entretiens*, II, 1872). Of Horta's work, the building that shows this combination most strikingly is the Maison du Peuple of 1896-99 (PL. 424).

Horta was not alone in his interests in Brussels. The city had in the artists' association, Les XX, one of the most active and progressive centers in Europe. Here examples of Gauguin, Khnopff, and Whistler, of Walter Crane, Beardale, and Toorop, and of Mackmurdo's friends and collaborators, Horta and Image, could be seen. Among those stimulated by this group, the most intelligent and far-sighted was Henri van de Velde (1863-1957). His work kept close to Art Nouveau (PL. 467), but his theoretical writings pleaded, on the one hand, for rationalism and a recognition of the new technological conditions; on the other hand, for "organic" ornament. The term is ambiguous, since it can cover abstract as well as natural forms, and both exist side by side in Art Nouveau. There was, indeed much controversy between the naturalists and the stylists within the movement.

Van de Velde visited Germany in 1900 and there for a number of years did most of his work. The ground was prepared for him, for in 1895 the foundation of *Pan* had marked the beginning of Art Nouveau in Germany. To its prehistory belongs some decorative work by H. Obrist (1863-1927) done as early as 1893. The principal representatives in Germany are Otto Eckmann (1865-1902), notable chiefly in book decoration (PL. 470), and August Endell (1871-1925), whose Atelier Elvira of 1897-98 in Munich is his most original building.

Ties between France and Germany were close in these years. Siegfried Bing, who came from Hamburg, opened a gallery for modern decoration in Paris in 1896 called "Maison de l'art nouveau," which gave the style its name. Julius Meyer-Graefe, one of the originators of *Pan*, opened another such gallery in Paris in 1899 and called it "La Maison Moderne." He and Bing discovered Van de Velde. In France Art Nouveau had two centers, Paris and Nancy. At Nancy the creator was Emile Gallé (1846-1904), who is most familiar for his decorative glass but also made furniture, etc. Nancy Art Nouveau is characterized by naturalism in ornament and by a liking for didactic or explanatory inscriptions. In Paris the principal names are those of Charles Plumet (1861-1928), a decorator, and Hector Guimard (1867-1942), an architect, whose Castel Béranger, 16 rue de la Fontaine, of 1894-98, and Métro stations of 1900 are the climax in France, though the style lingered on

long after that, longer than in other countries except Italy, Spain, and South America.

In Italy the names to be recorded are Giuseppe Sommaruga (1867-1917) and Raimondo D'Aronco (1857-1932). Sommaruga's *Flores*, as exemplified in the Palazzo Castiglioni of 1903 in the Corso Venezia in Milan, and in the Grand Hotel (1909-12) of Campo dei Fiori above Varese (PL. 467), has its parallels in France. Thick vegetable incrustations on the façade link it to Art Nouveau. The case of D'Aronco is more interesting. His principal work was done for the Turin Exhibition of 1902 (PLS. 467, 468) and is far more imaginative and original than Sommaruga's. His inspiration came clearly not from France but from Vienna.

Vienna played an important and interesting part in the evolution of architecture and decoration about 1900. As early as 1898, in the building for the Sezession by Josef M. Olbrich (1867-1908), Art Nouveau decoration is applied in contrast to areas left entirely bare. This sense of purity and restraint grew stronger in the work of Adolf Loos (1870-1933), which can scarcely be called Art Nouveau, and that of Josef Hoffmann (1870-1956), to which the term applied only occasionally and at the very beginning of his career. It is likely that the change toward a new relation of decoration to surface was influenced by the style developed in Glasgow from 1897 onward, which was known to the Viennese architects. Certainly at some stage the Viennese were impressed by Glasgow; otherwise the great leader of the Glasgow school would not have been invited to exhibit interiors at the Sezession in Vienna, late in 1900.

This great leader was Charles Rennie Mackintosh (1868-1928). His work is the most exquisite of all Art Nouveau (PLS. 468, 469). It combines very erect, slender, straight verticals with panels decorated with bewitching curves and flowers and sad, mermaidlike figures in white, silver, rose, and lilac — a combination of the chaste and the piquant not equaled by any of the other exponents of Art Nouveau. But Mackintosh is almost the only one in Britain to whom the term Art Nouveau can be applied without reserve. Britain was in a position different from that of the other countries; the Arts and Crafts movement had started long before Art Nouveau, had influenced it, but had carried on in a less radical and perhaps more sane and wholesome way. The outcome was much good work, but, as the break with the past was never made, neither did the development toward a truly new style of the 20th century ever take place.

Art Nouveau may have been *outré*, willful, and highly artificial, but its historical significance lies in the fact that it marks the beginning of a new period of original forms after centuries of forms based on antique or medieval precedent. In this one respect Art Nouveau belongs to the new rather than to the old century; in all others it remained part of the old. The 20th-century style in decoration is a style of industrial design; Art Nouveau a style of handicraft. The 20th-century style in architecture is a style of large-scale building jobs designed by men with a social conscience and an interest in rational plans and rational forms and their coordination; Art Nouveau is a style of art for art's sake, unconcerned, as a rule, about planning and unconcerned also about the social aspects of architecture.

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Nikolaus PEVNER

Illustrations: PLS. 466-470.

ARTS AND CRAFTS MOVEMENT. See ART; ART NOUVEAU; PRE-RAPHAELITISM AND RELATED MOVEMENTS.

ART TEACHING. See ARCHITECTURE; ART; EDUCATION AND ART TEACHING; INSTITUTES AND ASSOCIATIONS.

ASAM, THE BROTHERS. Bavarian architects and decorators. Cosmas Damian Asam (b. Sept. 27, 1686, Benediktbeuern, d. May 10, 1739, Munich) and Egid Quirin Asam (b. Sept. 1, 1692, Tegernsee, d. April 29, 1750, Mannheim). Both brothers were architects, the elder also specializing in fresco painting, the younger in sculpture and stuccowork. They formed a close partnership but also worked separately. Their father, Hans Georg Asam (1649-1711), an accomplished fresco painter, decorated the monasteries of Benediktbeuern and Tegernsee in the 1680s and 1690s. His style was strongly influenced by a year of study in Venice in 1682, especially of the work of Veronese.

The brothers grew up in the lake region south of Munich, in sight of the Bavarian Alps. They assisted their father on some of his last commissions and in 1712 went to Rome for a year, an experience that deeply affected their art by exposing them to the architecture and sculpture of Bernini and to the baroque ceiling paintings of Gaulli, Fra Pozzo, and Pietro da Cortona. Jesuit and Benedictine theater, calling for elaborate scenic effects, also engaged their interest. Back from Rome in 1714, Cosmas Damian painted a flat ceiling fresco for a church at Ensding, and in the following year the high dome of J. A. Viscardi's Italianate Church of the Trinity in Munich. In 1716 Egid Quirin completed an apprenticeship with the Bavarian sculptor Andreas Faistenberger, and the brothers' partnership began in earnest.

Their early masterpieces were the monastic churches at Weltenburg on the Danube and at Rohr (both 1717-21). Architecture, painting, and sculpture here achieved a harmonious combination closely allied to the Roman baroque of Bernini but with a local Bavarian inflection of gaudiness, naturalism, and earthy humor. At Weltenburg, the light is concentrated, as though it came from spotlights concealed within the dark interior. The great stucco figure of St. George on the high altar has been compared to Rubens' painting, and the *Assumption* in the choir at Rohr has been described as a sort of theatrical tableau with the apostles "gesticulating like French deputies."

Cosmas Damian's ambitious fresco cycle at Weingarten, begun in 1719, and his dome painting for the Swiss monastic church of Einsiedeln brought church decoration in the region of Lake Constance fully abreast of Roman practice. In these commissions the younger brother took no part.

In such later works as the redecoration of the old cathedral at Freising and the interior adornment of monastic churches at Osterhofen, Fürstenfeld, and Straubing, the Asams' effects became increasingly ornate and capricious and the lighting became more brilliant through greater diffusion. In color, their work increasingly approached the blonder tones of the French-inspired rococo style. This can be seen in the Church of St. John Nepomuk (1733-38; PL. II, 154), which these pious brothers built at their own expense next to their house in Munich, and is quite apparent in the Oratory of St. Maria Viktoria at Ingolstadt (1732-36), where a freer surrounding space made possible more abundant interior lighting, so that the Asams' essentially baroque art here rivaled the increasingly fashionable rococo.

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ASIA, CENTRAL. The name Central Asia is applied to the territories forming the core of the Asian continent and extending from the Great Wall of China in the east to the Caspian Sea and the Urals in the west, with the mountainous borders of Tibet and the southern limits of the Siberian taiga marking the northern and southern boundaries of the area. For centuries — for millenniums even — this vast region of virtually unrelieved desert and steppe witnessed the development of two contrasting types of human society: in the north, nomadic peoples, and in the south, settled populations in areas where there was water. In the areas of settlement complex civilizations developed which were profoundly influenced by the more vigorous cultures that flourished on their southern borders.

The cultures of the permanent settlements of the southern area, vitalized by exchanges and contacts with the Mediterranean world and with Persia, India, and China, exhibit a degree of consistency in their artistic development that makes it possible to study them as a whole. However, the cultures of the nomadic peoples, whose artistic development rarely intermingled with that of the fixed settlements in the south and who were influenced less by the major Eurasian civilizations, exerted considerable influence on the historic evolution of all Central Asia, whose southern areas developed with great intensity precisely because they were zones of interaction between the nomadic and sedentary empires, whether Persian, Indo-Afghan, or Chinese.

The earliest phases of human development in Central Asia were bound up with the progress of this region as a whole and of even vaster areas as well (see ASIATIC PROTOHISTORY), whereas in the historical period the intensity of intercontinental commerce and the missionary activities of various religious sects were responsible in the southern sectors — from Sogdiana to Serindia, corresponding roughly to Russian and Chinese Turkistan — for a series of cultural influences emanating from Iran (see IRANIAN PRE-SASSANIAN ART CULTURES; SASSANIAN ART), from the classical West (see GANDHARA), from India (see INDIAN ART), and from China (see CHINESE ART). In the north, the development of the great empires of the steppes (see STEPPES CULTURES) is extremely important for its own artistic and esthetic achievements. Furthermore, it must not be forgotten that the Central Asian races created such artistic cultures as that of Kushan (see KUSHAN ART), whose expression was influenced by their transition from nomads, probably of Indo-European origin, to inhabitants of fixed settlements.

The series of historical ties and the age-old contrast between the Altaic nomads of the north and the Indo-European groups — either peoples indigenous to the south or migrants who had settled there — justify treatment of the artistic evolution of Central Asia as a unit, even though we are confronted with two separate cultural areas whose esthetic concepts, reflecting two contrasting types of life, are fundamentally different. This treatment is further justified because the cultural heritage of the Indo-European civilizations that developed in the south finally became, when the area came under the domination of the Turks, the heritage of the Turkish empire and played a very influential role in the development of Islamic art (see GHAZNEVID ART). Thus the Central Asian civilizations of Sogdiana, Khwarizm, and Serindia not only succeeded in transforming and fusing the various currents that converged there but also acted as a focal center of truly individual artistic radiation toward both China and Tibet (see KHOTANESSE ART), to say nothing of the influences on Islamic art previously mentioned.

SUMMARY. The earliest phases (col. 815). The beginning of Khwarizm and the cultures of Sogdiana and the nomads: *Khwarizm I; The Karasuk culture; Khwarizm II; The Tagar culture; The Altai; Khwarizm III and the Kankju culture.* The Altai and the Huns (col. 819). The Tashtyk and Hunnish cultures (col. 820). Buddhism, the Kushans, and Khwarizm IV (col. 822). The Silk Route and the history of Serindia (col. 827). The art of Serindia (col. 827): *Miran; Khotan and nearby centers; Tumshuk; Kucha and nearby centers; Qara Shahr; Turfan; Centers of the Chinese area.*

THE EARLIEST PHASES. About the 5th millennium B.C., Central Asia probably enjoyed a milder climate than at present. While

the inhabitants of the Siberian forests continued to live as they had throughout the Mesolithic period, by hunting, fishing, and collecting edible plant products, Neolithic cultures apparently were diffused throughout Central Asia from the borders of Manchuria to the lands around the Caspian Sea.

Probably the first Neolithic culture was that which developed in Mongolia from approximately the 5th to the 2d millennium B.C. Heir of the Magdalenian and Mesolithic cultures of the Lake Baikal region, it disappeared without a trace of survival or continuation (at least as far as modern research can discover) as a result of emigration prompted by the increasing aridity of the Mongolian plateau. Characteristic of this culture are the production of microliths and pottery, at first crude vessels, painted black on the inside and red on the outside. The rudimentary decoration was done in relief and sgraffito. In the more southerly areas of Mongolia, toward the end of the Neolithic period the influence of the Chinese Neolithic cultures is evidenced by the appearance of pottery painted and decorated with ornamental motifs in red and black. During this epoch the painted pottery is associated with smoothed axes and stone or terra-cotta rings and armlets.

There is but scant evidence available on similar cultures that developed in the oases of Chinese Turkistan: it consists of shards of painted pottery such as those found at Miaoherkow, 53 miles east of Hami (Qomul); at Senghim-aghiz, Tuksum, and Yär-Qoto, in the region of Turfan; and lastly at Cherchen, among the ruins located on the edges of the oasis and known as Kohne-shahr, "the old city"; in addition there is a vase, bought at Cherchen from a seller who said it came from Kohne-shahr. The decoration of the fragments is comparable to that of Ma-chang in Kansu province and hence may be dated as of the period extending from about 1700 to 1300 B.C. Despite the gaps in our information, these discoveries attest the existence, along what was later to become the great Silk Route, of communities of Neolithic culture employing virtually identical techniques and ornamental motifs.

Soviet archaeologists have made discoveries that disclose a noteworthy cultural complex, developed chiefly in southern Siberia and in the region south of Lake Aral, which was later to become Khwarizm and which first became known to us through heterogeneous relics recovered at Anau.

Evidence of the existence of another culture, which Tolstov called the "Kelteminar culture" and which he dates from the 4th millennium B.C. to the latter part of the 3d, is found at Dzhanbas-kale, located some six miles from the lower course of the Amu Darya River, southeast of the Sultan-uiz-dag Mountains. From it we have small artifacts in stone and bone and pottery painted in red and decorated with incised lines and stamped designs in circular borders. It is quite likely that some kinship exists between this culture and the cultural area at that time extending from the Persian Gulf to the northern region of Asia lying between Mongolia and the Ob River. It is likely, too, that it may have influenced the Neolithic culture of southern Siberia, relatively unknown but probably dating back to the 4th millennium B.C. Most of the artifacts are of stone, a few of bone; the pottery, monochrome, is smoothed down with grass but shows no trace of painting.

The Kelteminar culture was followed by what Soviet archaeologists have called the "Afanasievo culture," which they have dated in the 3d millennium B.C. The principal evidence of this culture was found in burial grounds, the most important finds coming from near Afanasievo Hill. The articles placed in the tombs consist of pottery painted red or decorated with horizontal or vertical zigzags in white. This links it, in Kiselev's opinion, with the pottery of Susa and Sialk, thus allying it with the production of Anau and Khwarizm. In addition to numerous bone implements, several crudely made articles of poorly smelted copper were also found — small plaques, needles, and coiled ornaments for the hair. The use of metal is so tentative, however, that this culture may still be considered Neolithic. The Afanasievo culture, definitely known to have extended to the Altai, was, in Kiselev's opinion, at the dawn of the Copper Age the one and only culture extant from the Siberian steppes to the Yenisei River, with additional links

connecting it with the areas to the southwest and west as far as the Volga, or perhaps even to the Black Sea.

Very little is known about the copper and bronze cultures in what is now Mongolia, which preceded the artistic developments known as the "art of Ordos." This art—known to us from discoveries made in various places, such as Hallong-ossu (Qatung-usu) and Hattin-sum (Qatin-sum) in Chahar, Luan-p'ing in Jehol, and Hsüan-hua north of Peiping—represents one strain in the animal art of the steppes which, according to Kiselev, stemmed from Tagar art and, according to Karlgren, reached its zenith in the 4th to the 3d century B.C., even conquering China during the so-called "Warring Kingdoms" epoch, or the period of civil wars, and leaving behind it noticeable traces in the Huai style. So far it has been impossible to establish a definite chronology in the art of Ordos, even though a tentative chronology may be made through comparison with the Chinese bronzes of the epoch of the Warring Kingdoms. In fact, Max Loehr, in studying the Ordos knives and daggers, has suggested a classification that would place the daggers of the *akinakes* type between the 8th and 5th century B.C., whereas the other daggers with guarded hilts and ring-shaped pommels would be assigned to the 8th or 7th century. However, to indicate the unreliability of this rule, we must keep in mind that the bronzes of Luan-p'ing and Hsüan-hua were dated by T. J. Arne no earlier than A.D. 350.

Objects dating from the 1st century of the Christian era discovered in eastern Turkistan do not provide enough data to establish a definite chronology for the development of this area. It was only with the advent of Buddhism that there appeared a composite art whose progress can be followed to the time of its disappearance, as a result of the Islamic conquest, in about the 10th century.

As a result of recent excavations, it is now possible to trace the development of the cultures of southern Siberia and Russian Turkistan. In that area, the Afanasievo culture was followed by what Soviet archaeologists have called the "Andronovo culture," after the town of that name near Achinsk. More widespread than the preceding culture, the Andronovo culture, extending from the Yenisei and the borders of the Altai as far as the Ural region and the northern shores of Lake Aral, may be dated approximately between 1700 and 1200 B.C. Here, too, the only evidence comes from graves. The pottery is dark and smooth, and the decoration, arranged in bands, consists of zigzag stripes, spirals, incised triangles, and fishbone motifs. In addition to bone arrowheads, small bronze implements (pins and awls) were found, proving a knowledge of metallurgy. Kiselev believed that this culture was related to those of the lower Volga, the Don, and the Donets and that it probably developed uniformly from the Urals to the Yenisei, thus indicating that it was the creation of a single people who undoubtedly stemmed from the people of the Afanasievo culture.

THE BEGINNINGS OF KHWARIZM AND THE CULTURES OF SOGDIANA AND THE NOMADS. *Khwarizm I.* In the bronze period in Khwarizm appeared the "Tazabagyab culture," so called after the name of a region in the Angka Kale area, a short distance south of Dzhambas Kale. As in the Neolithic, so in this period, which covers part of the 3d millennium B.C., Khwarizm maintained ties with southern Siberia and eastern Europe; indeed, its ceramics are very much like those of Andronovo and the Volga regions, in that they are painted and have incised decoration.

The Karasuk culture. The Karasuk culture (so named after a tributary of the Yenisei), which developed between 1200 and 700 B.C., marks a sudden and profound transformation in southern Siberia. An increase in the population is evidenced in the great number of pit graves which contained hand-shaped pottery and arms resembling those excavated at An-yang, one of the capitals of the Shang dynasty; the arrowheads are identical, the battle-axes have a pointed cutting edge, and some of the knives are similar to those found in Ordos, along the Great Wall, and also at An-yang; several are of Chou type. The bronzes, which depict animal figures in a primitive, static, and rather naturalistic style, testify to great skill in metallurgy.

Khwarizm II. Khwarizm meanwhile developed into the Iron Age civilization called the "Amirabad culture," which extended from the 2d millennium to about the middle of the 1st millennium B.C. and is characterized by crude pottery vessels, black and gray-black, with fishbone decoration on the rim. According to Tolstov, these objects belong to the Massagetae culture, which may be connected with the pre-Scythian settlements in the Caucasus, thereby confirming the existence of contacts between the Alans and the Massagetae.

The Tagar culture. Kiselev is of the opinion that between 700 and 300 B.C. a new culture superseded the Karasuk in the Minusinsk Basin, the so-called "Tagar culture," which bears the name of an island in the Yenisei. There are indications of an increased population, and the metalwork shows remarkable technical progress, probably due to the advent of elements from the Far East and the influence of Scythian and Sarmatian tribes, which had extensive contact with western Asia, particularly with the Achaemenian empire. The funerary equipment consists of flat-bottomed pottery, battle-axes, bronze daggers, arrowheads, knives, mirrors, beads, needles, metal plaques, rings, diadems, earrings, and flagstaff finials. The chief characteristic of this culture is the powerful animal art.

The Altai. The effects of the Karasuk and Tagar cultures were felt as strongly in the regions bordering Lake Baikal and northern Mongolia as in the Altai region. Here are found a great many tombs that can be dated back to the 7th century B.C. or perhaps even earlier. Covered over with wood and topped by a mound, they customarily include, beside the human remains, the bodies of one or two horses. Bronze knives, three-lobed arrowheads, and snaffle bits have been found. About the 5th or 4th century B.C. the daggers took on the form of the Achaemenian *akinakes*, while belt plaques and snaffle bits, which often are of iron, are also found. It may be stated with some certainty that these tombs are of the same type as those of the Sarmatian epoch in the Urals and Volga region. Hence it follows that a fairly uniform civilization extended at that time from southern Russia all the way to Ordos. A profound alteration occurred, however, as a result of the migrations extending from China to the borders of Europe.

Khwarizm III and the Kankju culture. While great events were transpiring in the world of the steppes between the 3d century B.C. and the beginning of the Christian era, Khwarizm was the scene of the development of two successive cultures: first, what Tolstov has called "the culture of the villages with wall dwellings," which can be dated between the 6th and 4th century B.C.; secondly, the so-called "Kankju culture," covering a period of more than five centuries, from the 4th century B.C. to about A.D. 100. Khwarizm became an organized state when the country was transformed by vast irrigation works. Early dwellings seem to have been derived from those of the Amirabad epoch; those uncovered at Kynzy-gyr and Kalaly-gyr are built within a powerful double wall, flanked by towers that were mentioned by the historians of the age of Alexander. The pottery is crude and decorated with circular stripes; there are straight-walled vases, beakers without feet, and still other pottery with red lids for the beakers and white ones for the vases; there are also figurines of horses and of women dressed in long robes and holding their right hands over their breasts.

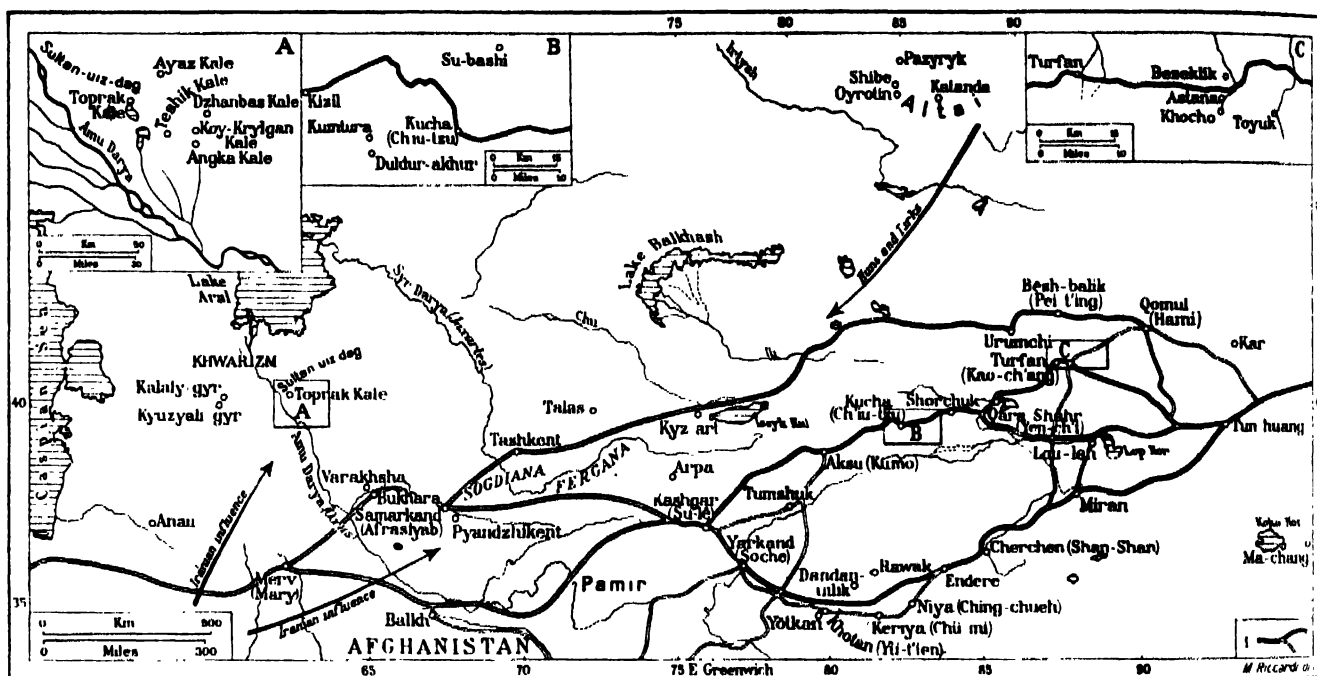
The name "Kankju" is derived from the Russian transcription of the Chinese name of Sogdiana (K'ang-ch'ü). The zenith of this culture coincided with a condition of complete independence and the special intensity attained at that time in the relations of Khwarizm both with the world of the steppes and with Sogdiana. The expansion of the Kankju culture is attested by a great many populated centers: Dzhambas Kale, Koy-krylgan Kale, and Kyunerli Kale. The cities were all built on a plan similar to that of the centers of the preceding culture, with the exception of Koy-krylgan Kale, which is built on a circular plan. The pottery, turned on a potter's wheel, has thin walls and is nearly always red, although there are examples

of pitchers painted black and footed beakers. In conjunction with utensils of this type is found cruder pottery, similar to that of the Sarmatians and the nomad peoples of the northeast. Lastly, there is another type, decorated with incised triangles and painted red on yellow, which has some kinship with the pottery of the preceding epoch. Within a short time, the westward pressure exerted by the Yüeh-chih and the establishment of the Kushan empire produced further changes in Khwarizm.

THE ALTAI AND THE HUNS. Even the Altai region, which had already felt the influence of the Scythians and had maintained close relations with the Tagar culture, felt the reper-

art are apparent. The stylization, sober and restrained, achieves remarkable decorative effects. Funerary equipment quite similar to that in the tombs of Pazyryk occurs in other sites, such as Shibe, Kara Kul, and Oyrotn, probably dating back to the 1st century B.C. The later Altaic culture is represented by the center of Katanda (ca. A.D. 1-100), where the many articles discovered display more stylized decoration reminiscent of the art works of Noin-ula in Mongolia, dating from the beginning of the Christian era.

THE TASHTYK AND HUNNISH CULTURES. The Tashtyk culture, which superseded the Tagar culture in the Yenisei Basin



Ancient centers and cultural regions of Central Asia, with arrows indicating the principal historical and artistic influences. Key: (1) Caravan routes

cussions of the migrations caused by the expansion of the Hsiung-nu (see below) and their eventual defeat by the Chinese. The new phase, which lasted from about 300 to 100 B.C., witnessed the establishment of a Sarmatian-Hun cultural complex, called the "Pazyryk culture." This was reached by Hellenistic influences spreading from the Greek states lying to the southwest or perhaps from the remoter regions to the north, which were also under Greek influence. Contemporaneously with the Pazyryk culture, in the basin of the upper Yenisei, a new culture, the Tashtyk, superseded the Tagar.

From the Pazyryk culture there still remain spacious tombs, which in several sites are composed of two chambers separated by a wooden partition, one of which contains the coffin, carved from a tree trunk. In some of the tombs there were buried horses disguised as reindeer, a fact which suggests that the use of horses had only recently replaced that of reindeer. The tomb furnishings are extremely rich: among the many articles are Chinese lacquerwork of the 1st century B.C., massive gold jewelry and wooden ornaments covered with thin gold leaf and intended to be worn on the clothing, and buttons or plaques of wood or leather. Equally rich are the trappings of the horses: phaleræ and round plaques carved from wood and covered with gold, bearing chimeric animal figures suggestive of the griffin or phoenix. These figures suggest Chinese or Iranian art; however, the style is highly individual and represents a blending of the Hunnish style, which had been strongly influenced by Chinese art, with that of the Sacæ and Sarmatians, who had brought with them elements of Achaemenid Persian and archaic Greek art. In the decorative motifs, the naturalistic tendencies peculiar to the depiction of animal figures in Scythian

and lasted from the 1st to the 3d century, is considerably different from the Tagar. Iron was commonly used. Many of the tombs, like those at Pazyryk, were very large, but there occur instances of mummification as well as cremation; an innovation appears in the use of funerary masks, which were applied while still wet to the face of the dead, thus reproducing the features exactly. The clothing was ornamented with carved wooden plaques covered with a thin layer of gold; buckles, weapons, mirrors, and jewelry were also found in the tombs. Some of the plaques show stylized figures of griffins, and others show horses similar to those of the Han period. Indeed, this period was characterized by a marked penetration of Chinese civilization, further attested by the presence of unmistakably Chinese lacquerwork, fabrics, and mirrors.

In the 3d century, according to S. A. Teploukhov, this culture underwent a radical transformation as a result of the disappearance of the controlling elements of Indo-European origin, which were replaced by Turkish groups. The most ancient tombs of this period are marked by slabs; the body was either laid directly in the earth or first placed in a hollowed tree trunk and was accompanied by the body of the owner's horse. The weapons were of iron, and the saddles were decorated with bone plaques bearing incised hunting scenes. Many of the objects found in the more recent tombs are of Chinese origin; and in the decoration of objects of local origin the influence of China, together with that of Persia, is apparent, while the influence of animal art seems to diminish.

Tombs dating from the 9th century on contain a varied assortment of objects: frequently, instead of the usual horses, only the harness is found, and the arms and jewelry, ornamented

with figures, show marked Sassanian influence. The Yenisei region now acquired individuality, in part determined by the establishment during the 9th century of the Kirghiz empire. Notwithstanding the influences emanating from Persia and T'ang-dynasty China, the art of the Kirghiz shows that the tradition of animal art was still alive.

In Ordos, the Hunnish cultures are represented by the royal tombs, which probably belonged either to the Hsiung-nu themselves or to their principal vassals. A great many objects were buried in them, including bronzes decorated with animal figures, woolen fabrics with felt appliqué depicting scenes of combat between animals, other fabrics of great value, one of which is of Eastern origin, and an example of Chinese lacquer-work which makes it possible to fix the date as later than the 2d century.

The tombs found near Chita in Transbaikalia are, according to G. von Merhart, possibly from an earlier period (2d to 1st century B.C.). Those near Troizkossovsk, north of Kyakhta, decorated with stone markers bearing incised animal figures, are definitely later than 118 B.C., as is proved by the presence of Han-dynasty coins bearing that date. A particularly interesting discovery is that of a frontier fortress, dating perhaps from the 2d century B.C., at the confluence of the Ivolga and the Selenga rivers. This is probably the most ancient inhabited center of the Hsiung-nu discovered so far.

The use of animal figures in decoration apparently continued to flourish in both Ordos and the northern areas during the Han period (from 206 B.C. to A.D. 220) and even into the following period, that of the Six Dynasties (A.D. 222-589). Its influence is still apparent in certain types of Chinese clasps in which motifs of intertwined animal figures appear. It may have continued even longer, as suggested by several so-called "Nestorian" bronzes, cruciform or bird-shaped, which have all the earmarks of being bronzes with magic properties.

South of the Altai, the strain of animal-art motifs flourished among the Huns for several centuries, representing, in a region perhaps occupied earlier by settled communities of Indo-Europeans, a continuation of the culture of the steppes. Bernshtam's excavations in 1938-39 in the burial grounds of Kenkol in the Talas River Valley, turned up a rich array of tomb furnishings, some of which were locally produced and others definitely of Chinese origin. The discovery of asymmetrical bows reinforced at the extremities in Hunnish style leaves no doubt as to the nature of this culture; further confirmation is provided by the human remains, which are of brachycephalic type, found in conjunction with other remains of types resembling the European, very probably those of slaves put to death and buried with their masters. Bernshtam maintains that among the group of tombs located north of the Tien Shan (in the Issyk Kul and Balkhash region) those of Kenkol and Kyz-art represent a Hunnish culture dating approximately from the beginning of the Christian era; others, however, discovered at Arpa, Atbac, Zon-Alai, and Maada, may have been part of a later group (2d-5th cent.).

Still, the exact interpretation of the relics found in the region extending from the Yellow River to Lake Aral remains uncertain. As to the period for which we have no written testimony from the Chinese, western Asian, or Greek historians, all that can be said is that in the regions south of the Siberian forests, extending from the borders of Europe to the Yellow River, there existed a vast complex of peoples of European type, the dolichocephalic type generally predominating. Another complex of peoples, of Mongoloid type and more or less brachycephalic, had settled in the Siberian taiga and the northern areas of the continent. The populations whom the Chinese called by various names, finally settling on the term Hsiung-nu about the 3d century B.C., were perhaps of the former type and constituted a special group stemming from the fusion of brachycephalic peoples who had slowly emerged from the forested areas. Later evidence tends to confirm this: for example, it is known that in the 3d century, the slaughter of the Hsiung-nu who had settled in North China, carried out by the king of Chao, Shih Min, caused the death of many warriors who had "prominent noses and thick beards"; in addition, the Chinese

historians of the T'ang epoch make clear reference to the tribe of the Huang-r'ou Shih-wei, "the yellow-headed Shih-wei," obviously blond people living on the upper Amur who were numbered among the ancestors of the Mongols. It would seem that the Hsiung-nu had only a very slight connection with the Huns of the historical period, through the Mongol element present in both groups. Linguistic evidence concerning the Hsiung-nu is scant, and only one word whose form is definitely proved seems to recur in the vocabulary of the Ostyak people of the Yenisei, a group whose origin is still highly debatable. It would seem, however, that the Huns spoke an Altaic language.

The development of the Karasuk and Tagar cultures demonstrates how brachycephalic elements, in all probability originating in the forest area, gradually became intermingled with peoples similar to the European type. It is highly probable that proto-Chinese elements had moved into the Minusinsk regions after the downfall of the Shang dynasty, toward the end of the 2d millennium B.C.; but if such a migration occurred, it must certainly have been further augmented by ethnic groups coming down from the north. The movement must have taken place in the 1st millennium B.C. along the entire margin of the Siberian forest and must have impelled the Indo-European peoples to accelerate their displacement toward the west, thus causing the migration of the Scythians and Sarmatians toward eastern Europe. This theory is strongly supported by the discovery at Pazyryk of horses disguised as reindeer (see above). Thus, this may have been the people who, after occupying the Altai region, went south to the Lake Balkhash area, where they became the progenitors of the Huns of the historical period.

At the close of the 3d century B.C., Mao-tun had founded the vast empire of the Hsiung-nu, which, despite constant conflict with the Chinese, lasted until the beginning of the Christian era; upon the fall of this empire, groups of the Hsiung-nu headed west under the leadership of Chih-chih and settled on the steppes of the Chu and the Talas. It may be that this group of Hsiung-nu, crushed by the Chinese about 35 B.C., bore along with them elements of Chinese culture. It seems certain that they subjugated the Wu-sun tribe during their passage and pushed before them the true Huns, who were of pure Mongolian race and had long before come down from the Altai. The Huns, in their march toward eastern Europe, took advantage of the reputation of the Hsiung-nu, just as later two Turkish tribes from the Altai usurped the name of the Avars, the Yüan-Yüan, when these had been decimated by the Turks and had merged with them.

This outline of the history and population movements of Central Asia is merely a working hypothesis. It is definitely known, however, that the conflicts between the Hsiung-nu and the Chinese had profound repercussions throughout all Eurasia. In 59 B.C., Serindia was liberated from Chinese administration and became a bone of contention between China and the nomad empires that followed one after another in northern Asia over a period of centuries.

BUDDHISM, THE KUSHANS, AND KHWARIZM IV. About the beginning of the Christian era, Buddhism, which had conquered part of eastern Iran, had engendered a Greco-Buddhist art, originated apparently about the end of the 1st century B.C. in the Gandhara region and destined to last in the same area until the 7th century and to a limited degree in several localities until the 8th century, subsequently spreading to Serindia and China, even reaching Sogdiana through Bactria.

The Greco-Buddhist influence nevertheless had no profound impact on the Khwarizm culture, where direct Occidental influences are much more evident. The inhabited centers of the region were gradually transformed from fortified villages into villages without walls, and great castles, the homes of feudal lords, were erected, usually on top of steep hills, as was the fortress of Ayaz Kale, with mighty walls, galleries for archers, and reinforcements in the form of square towers. The dwellings in such villages were clustered about the foot of the hill. Tolstov calls this epoch, which extended from the 2d to the 3d century, the Kushan period, although the Kushan empire apparently did not actually hold sway over Khwarizm. The remains of

this civilization can be dated approximately through the coins of Kanishka. Among these remains were found, together with pottery glazed in a bright green, fragments of alabaster vases and several rather crude statuettes (female figures and representations of unidentified persons, birds, and other animals).

The "Kushan period," evidence of which occurs also in the intermediate strata of Toprak Kale, was followed by a transitional period which Tolstov dates between the 3d and 5th century and which he calls the "Kushano-Afrigidian" culture. It was probably a period of decadence during which several cities were abandoned, while the castles, showing definite advances in the art of defense, became even more massive. At Toprak Kale, typical of this period, excavation has revealed a slow transition from the ancient forms to those characteristic of the "Afrigidian" period. The ancient forms disappeared entirely at the end of this transitional period, and after the 5th century the pottery is definitely decadent, becoming cruder as a result of the disappearance of urban craftsmen. Sculptures and fragmentary but very important frescoes are also found at Toprak Kale. Among the subjects are: a harpist playing, bent over his harp; a figure that may represent a seated beggar; the harvesting of fruit; undulating decorative motifs on a gray-blue background; fragmentary animal figures; human faces and busts; white flowers against a dark-blue or orange background. Predominant in these frescoes are shades of ocher ranging from yellow to brown, through all the tints of red, plus blue and black, with all the intermediate hues from blue-gray to dark blue. They are apparently the product of a decidedly realistic local art, reminiscent of the contemporaneous frescoes of western Asia but entirely unrelated to Greco-Buddhist art. The fragments of sculpture, including the piece called the "red head," also reveal a close affinity with Western works.

The "Afrigidian" culture, which extended from the 6th to the 9th century, was marked by a decline in the number of cities. A new type of community appeared, clustered about the feudal castles, in whose structure were incorporated a watchtower, sometimes topped by a dome and standing on a plinth or block, and heavy ramparts; the most representative examples are Berkut Kale and Teshik Kale. Among the typical utensils of the period are large jars whose necks bear incised decorations and finger impressions, thin-walled pitchers, provided with handles and narrow at the bottom, and pottery of ordinary clay turned on the wheel, like that of the preceding period. At Teshik Kale fragments of fabric have been recovered, as well as statuettes and molds for seals, two of which depict a four-armed deity. In Tolstov's opinion, this indicates the influence of Indian art, exerted through Sogdiana; coins discovered there seem to bear out this hypothesis.

Only a few sites in Sogdiana have been studied. The less recent discoveries, such as the frescoes discovered at the site of Afrasiyah, near Samarkand, and those found at Varakhsha, near Bukhara, are but little known except through descriptions and drawings. Only Pyandzhikent (Pjandzikent), which seems to have been the capital of Sogdiana from the 6th through the 8th centuries, or until the Arab conquest, has been the subject of an important publication. The excavations carried out between 1946 and 1952 at the site known today as Kainar, about 43 miles east of Samarkand, have revealed a great many ruins, including those of the Shahristan, a wall-encircled fortress within which were uncovered the ruins of two temples, a structure that was probably a palace, and many dwelling houses. Only one of the temples has been entirely uncovered, but many frescoes have been found in both. In the first, various persons are depicted worshipping a veiled deity or participating in dances, ritual banquets, or sacrifices; in the second, the principal fresco portrays three haloed deities, one of whom is four-armed; at one side, there is a funeral scene, in which the deceased, lying under a domed structure, is watched over by a throng of lamenting people. Other paintings have been found in both the palace and the houses. One of them portrays a haloed personage with a beard, the sole example of a highly individual style. In another group of paintings there are representations, apparently belonging to the last phase of this art, of persons sitting cross-legged, one behind the other, in rather rigid poses.

D'jakonov has differentiated several styles among these paintings and has related them to the paintings of Sogdiana, Khwarizm, western Asia, Afghanistan, and other centers, identifying those elements which, despite the diversity of religious creeds, occur in the related arts and in the civilizations that developed in Central Asia from the first centuries of the Christian era until the Islamic conquest. Archaeological discoveries relating to the period between the 2d and 4th centuries give evidence that the Kushan empire at its apogee also influenced the complex which included Sogdiana and Khwarizm.

At the beginning of the 5th century, the decline of the Kushans occasioned new migrations in Central Asia. The Ephthalites, or White Huns, started to move toward Sogdiana and at last occupied it about A.D. 440. The Ephthalite domination was catastrophic for eastern Persia and northwest India: the invaders cruelly persecuted the Buddhist communities, destroying their monasteries and works of art and plunging the Greco-Buddhist civilization into a state of ruin from which it was never to rise again. The Ephthalites, however, were in their turn overrun by the T'u-chüeh. Although the T'u-chüeh were tolerant, the traditional sources that nourished the Buddhist communities of outer Persia and Central Asia were virtually exhausted, and when at the beginning of the 8th century the Arabs set out to conquer Central Asia under the leadership of Quteiba, that culture, which had exerted its influence from Sogdiana to the borders of China, was annihilated.

Although Khwarizm maintained trade and cultural bonds with the world of the steppes, especially with the Caucasus, the Volga Valley, and the Ural region, Sogdiana played a no less important role in exercising similar influences on the region north of the Tien Shan, through Central Asia and the Far East. Indeed, because of its geographical position, Sogdiana dominated the most heavily traveled trade routes linking western Asia and the Mediterranean world with north-central Asia and China. Until the beginning of the Christian era, the people of Sogdiana guided the caravans traveling to the Far East and founded colonies both in the region of Semirech'e and along the road linking Kashgar with Kansu. In this way they played a vital role in the propagation of artistic ideas and traditions, so much so that their language became a sort of lingua franca, used throughout Central Asia as far as China.

THE SILK ROUTE AND THE HISTORY OF SERINDIA. The Silk Route, when it reached Kashgar, divided into two trails, one branch of which followed the line of oases located at the foot of the Astin Tagh Mountains, the other following the Tarim Valley, to merge farther on at Tun-huang with the *ἑποδία* or *Ἀποδία* of the Western geographers, thus forming a single route which led through Kansu to Loyang (Hanan). In the late Middle Ages, the route underwent several alterations, and in the same period another road began to be traveled which linked Sogdiana with Kansu, and from which the Silk Route and the roads to Kao-ch'ang or to Iwu, later called Hami (Qomul) could be rejoined. By means of these great paths of communication it was possible for the great centers of Serindia to play a leading role in the diffusion of various forms of intellectual and artistic expression; and since the control of these paths of communication was vital to trade, it was hotly contested between the nomad empires of north-central Asia, China, and even the Tibetans. Obviously, then, the cultural and artistic development of Serindia is bound up in this struggle.

The earliest historical data about these regions, although brief and fragmentary, go back to the 2d century B.C. They come either from Chinese sources (which describe the actions taken there by generals or high administrative officials who conquered and governed the area) or from Ptolemy's geography. However, the archaeological discoveries of the first 60 years of the 20th century provide much more reliable data on the languages, religious currents, and forms of artistic expression of the regions.

Around each oasis of any importance, the peoples of the Tarim Basin established small independent states which were in continual conflict with one another. The most noteworthy centers located along the line of oases at the foot of the Astin

Tagh Mountains were Yarkand (Soche), Yötkan, west of Khotan, Chü-mi (Keriya), Ching-chüeh (Niya), and Shanshan (Cherchen); in the Tarim Valley were located the centers of Su-lê (Kaahgar), Wen-shu (Uch-Turfan), Kumo (Aksu), Ch'iu-tzu (Kucha) and Yen-ch'i (Qara Shahr, or Karashahr); beyond, toward the northeast, extended the kingdom of Chü-shih (Turfan) and Iwu (Hami); finally, northwest of Lop Nor lay the Chinese colony of Lou-lan.

Earlier, in the times of the Emperor Wu of the earlier Han dynasty, the expeditions dispatched by Chang Ch'ien to the Yüeh-chih between the years 138 and 126 B.C. and the subsequent ones to the Wu-sun in the Ili Valley in 115 B.C. had enabled the Chinese to acquire a valuable though imperfect acquaintance with the regions of the West. Actually, it is only later, after the conquest of Serindia at the hands of Pan Ch'ao between A.D. 72 and 102 and the establishment of a protectorate in A.D. 130, that the Chinese sources began to give accurate information. Henceforth, contacts between the Chinese world and Central Asia were assured, and although during the following centuries the influence of China was discontinuous, the fact remains that whenever a powerful dynasty ruled China, the petty kings of Serindia hastened to offer proofs of their submission, being required then to run the risk of betraying the rulers of the nomad empires.

In the period extending from the decline of the later Han emperors to the restoration of the Chinese protectorate (A.D. 220-630), the small states of Serindia found their lot a varied one, divided as they were between the domination of the Chinese and that of the Avars (Yüan-Yüan). T'o-pa Tao forced the Avars to reduce their pressure upon Serindia after 425, with the result that in 435 the whole area and several groups to the west paid homage to him. However, the Avars were still a threat, and the Wei dynasty was compelled to wage a bitter struggle to prevent them from blockading the Silk Route.

Finally, in 552 the T'u-chüeh (Turks), after subjugating the Avars, founded a vast empire; this was the prelude to a sweeping transformation of all Central Asia.

Against this background of strife, Serindia, a bone of contention between China and the nomad empires — plus the people ruled by the Kushans at the zenith of their power — reached a remarkable degree of development in both the arts and literature, which were influenced by currents of Greco-Buddhist, Indian, Mediterranean, Iranian, and Chinese origin.

When the Chinese succeeded, in the 1st century of the Christian era, in establishing their protectorate over the cities of Serindia, they found themselves among people who had attained a high degree of civilization. They encouraged the spread of Buddhism, which was also an instrument of the diffusion of Indian literature and Greco-Buddhist art. On the other hand, the caravans traveling from the eastern Mediterranean introduced Western influences: this was the period in which, according to a passage from the writings of Marinus of Tyre cited by Ptolemy, a "Macedonian" trader named Maës Titianus instructed his agents to travel through the various stretches of the Silk Route, which, starting at Antioch, passed through Ecbatana, reached Balkh (Bactra) and, crossing over the Pamira or by way of Samarkand, arrived at Kaahgar. Between the Mediterranean and Loyang, extremely varied cultural influences traveled with the merchants' wares, thus reaching Serindia and merging with the indigenous culture. The Buddhist missionaries from eastern Persia reached China; a Parthian, An-shih-kao, arrived there in A.D. 148 and died there in A.D. 170; an Indian, Chu Shu Fu, and a Kushan, Chih Chao, both arrived there in A.D. 170 and established one of the first monasteries in Loyang; also from the Kushan empire was Chih Ch'ien, who, between 223 and 253, translated several Buddhist texts into Chinese. It seems quite certain that many missionaries also reached Serindia and translated a great many texts into the indigenous languages of that region (which, after the studies made following the discovery of numerous documents at Turfan, we know today to be varied and of Indo-European type).

Central Asia was to be vitally affected by the defeat of the Avars by the T'u-chüeh (Turks) in 552 and the subsequent

destruction of the Ephthalites (White Huns), which occurred in 565. These events recreated in the area the situation prevailing in the time of the Hsiung-nu empire. According to Chinese sources, the T'u-chüeh originated in the Altai and were noted for their metalwork. The Chinese historians notwithstanding, the T'u-chüeh seem to have been totally unrelated to the Hsiung-nu; rather, they appear to have belonged to those forest peoples who gradually became part of the steppe culture, who had in the dim past given rise to other prehistoric peoples, including the Indo-Europeans, and who in a widespread migration from China to southern Russia and Iran had led the so-called "Turkish" peoples to supersede those Indo-European (or at least Indo-European-speaking) peoples who had been forced either to abandon their native hearth or to become assimilated, or who at least were constrained to adopt an Altaic language (Turko-Mongolian). Whatever their origin may have been, it is well established that the T'u-chüeh succeeded in gaining control of the steppe from the borders of Manchuria to Lake Aral and attempted to extend their dominion farther along the Silk Route. China, which had regained under the T'ang dynasty the position it had formerly held under the Hans, opposed their advance and even managed to subjugate them during the period from 651 to 681, thus maintaining substantial control over Serindia until the middle of the 8th century, when the T'u-chüeh gave way before a new, less warlike Turkish people, the Uigurs. When in 843 the latter were in turn expelled from the steppe region and became established in the oases of Kansu and the northern area of the Tarim Valley, they did not introduce any innovations into the cultural structure of those regions, which for approximately two centuries continued their normal development.

The Turkish thrust grew still stronger; it became a southward movement of the entire Turkish people and the peoples who had been assimilated to the Turks. China still resisted, thus allowing the inhabitants of Serindia to extend their last "Aryan" years until approximately the end of the 10th century. Rather paradoxically, the Turkish elements that settled in the northeastern oases of Serindia were to preserve longest the culture they had inherited from their predecessors, with whom, moreover, they were finally to become merged. On the other hand, the Indo-European peoples living in the western and southern parts of Serindia maintained their independence until the 10th or 11th century, ceding it only under the blows of the Islamized Turks who had advanced from the west; finally, it was the Uigurs who defended the tradition inherited from the culture of India and western Asia in the Tarim Basin, although only in the Turfan and Kucha regions, where they held out until the 15th or 16th century, when China under the Ming dynasty was obliged to withdraw within her own borders, abandoning these peoples to their fate.

Even before the T'ang period, in the cities of the Tarim Valley, Buddhism had come into full flower, completely dominating those small kingdoms in which Indian culture had grown sufficiently important to make Sanskrit the official religious language. Recent developments in linguistics have made it possible to determine that in addition to Buddhism other religions were also influential in Serindia, including Nestorian Christianity and Manichaeism. Buddhism, however, continued to exercise a strong influence, retaining its strength in China and India, although the Buddhist communities of eastern Iran had already been destroyed by the Moslem invaders. Frequent contact had been established between China and India, whither the Chinese pilgrims traveled to visit the holy places or perfect their knowledge of the scriptures; they brought back into Serindia precepts intended to resuscitate or strengthen the Buddhist faith. As early as the 5th century, several Chinese pilgrims had traveled through Serindia: Fa-hsien and Chih-mêng, and, later, Sung-yün and Hui-shêng; others traversed it in the 6th century; finally, the greatest of them all, Hsüan-tsang, between A.D. 629 and 645, traversed the northern caravan trail of the Tarim Valley on the outgoing journey and the southern trail on the return trip. He has left us an especially colorful and vivid description the last record of a civilization destined soon to be destroyed by the Islamic invasion and to disappear

without leaving even a trace in the memory of the peoples who had created it.

Actually, it was not the Arabs who were to destroy, as they had done in eastern Iran and northwestern India, every surviving reminder of the past; rather, it was the Turks, who, established north of Syr Darya and in the Lake Balkhash region, had been converted to Islam during the 10th century and had set up, in about 950, a state that included the Kashgar region and that of the Qarahanidi, north of the Tien Shan, which had become a Turkish province earlier. The Islamic penetration was destined to progress rapidly even in the western region of what had been Serindia, which for the next few centuries, despite the resistance of the Uigurs, was to become a Turkish province.

THE ART OF SERINDIA. *Miran.* The art of Serindia, which had developed, in the midst of all these vicissitudes, from the 1st century of the Christian era until the Moslem invasion, shows traces of the varied influences that had played upon it. Greco-Buddhist in form, it originally displayed Indian or Persian influence, depending on the circumstances, and reflected the art of western Asia. Then it was repeatedly influenced by Chinese elements, which dominated it throughout the T'ang dynasty. Subsequently, elements from the West seem to have influenced it. Actually, however, this art, henceforth cut off from its Persian and Indian sources of inspiration because of the Islamic conquest, absorbed extraneous influences only from China.

The southern reaches of the Silk Route, which passed south of the Tarim Basin, were studded, at the foot of the Astin Tagh Mountains, with a number of centers, many of which were inhabited over long periods but were later abandoned because of sudden shifts in the course of the rivers. Among these centers were Miran, Endere, Niya, and those comprising the Khotan group: Yötkan, Rawak (Ravaq), Dandan-uilik, and Ak-terek.

The ruins of Miran are located south of Lop Nor in a region which probably was supplied from Cherchen Darya; they were brought to light by Sir Aurel Stein's excavations. The principal building is massive, square in plan, and lighted from the north and the south; on a circular base in a round room inside stands a stupa not visible from the outside. The dome of the exterior building touched the top of the stupa, whose circular corridor had, in the course of time, become filled with sand. As a result of the protection of the sand, there were preserved, to Stein's surprise, wall paintings which, upon close examination, proved to be the most ancient in Turkistan. They may, in fact, be dated from the end of the 3d century or the beginning of the 4th by comparison with other paintings from western Asia and especially by the presence of brief agraphiti written in the Kharoshthi alphabet, which fell into disuse in the 4th century, and in a language which is a variety of Prakrit.

This ensemble of paintings illustrates, on the upper part, the edifying story of the philanthropic Prince Viśvāntara, and the lower part, or dado, bears a garland supported by *putti*, interspersed with the busts of several personages. This is a subject encountered elsewhere in several sites in western Asia and also at Dura-Europos, where the paintings date from the 3d century. There is no lack of examples of Greco-Buddhist art and works of the Kushan epoch. These figures, similar in style to certain Roman paintings in the Hellenistic tradition, have round faces, large eyes, and straight hair; among them is a personage wearing a Phrygian hat, and angels whose wings are painted in a manner different from that of Hadda. In the scenes from the life of Viśvāntara, however, the characters are distinctly of Semitico-Oriental type; one of them wears a curious sort of headgear, plainly of Indian type, and the prince's car is reminiscent of that of Sūrya at Bodhgaya. The persons portrayed are not of Indian type; however, some of the details of their presentation are obviously Indian. Furthermore, we know the name of one of the painters, Tita — perhaps the equivalent of Titus — who was very probably a Roman subject of Asian origin but Hellenistic training and who was perhaps assisted by some of his pupils.

Although artistically these paintings are rather mediocre, they are nevertheless quite important for the Occidental in-

fluences they reveal, attesting to the broad scope of the exchanges known to have occurred between the Mediterranean world and the Far East as well as to the continuity and renewal of artistic influences emanating from centers of Hellenistic culture in the West. Great waves of Hellenistic influence swept over Bactria, Kapisa, and Gandhara throughout the first few centuries of the Christian era, leaving their impress on such places as Miran and Hadda. The examples discovered in Hadda are, as a matter of fact, in Hackin's opinion, even more closely akin to Hellenistic art than those of Miran. Opinions vary as to how these influences reached Miran.

Khotan and nearby centers. Although Romano-Hellenistic influences are quite apparent at Miran, the imprint of Greco-Buddhist art, on the other hand, predominated in the Khotan complex between the 5th and the 8th centuries. The Khotan centers provide examples of the stupa, of certain Greco-Buddhist elements in the plan of monastic complexes and in wall painting (as, for instance, in the standing, juxtaposed figures of Buddha in Rawak, comparable to the decorative arrangements found near Hadda), and of the adoption, almost unaltered, of Greco-Buddhist decorative motifs and elements (for example, in the Yötkan terra-cotta figures representing busts of musicians and placed within vaulted arches corresponding to the decorative motif of the volute and the Buddhist balustrade).

Gupta influences also appear in various objects discovered in the Khotan area: fragments of stylized drapery in stucco, oval faces with simplified treatment of the hair and idealized expression, a small Buddha figure with closely clinging drapery, and, in particular, flying figures bearing garlands. Later, in several works of art from Dandan-uilik — some of which can be dated about the 9th century — Hindu influences are apparent, yet the customary themes of Greco-Buddhist origin continued to prevail. The Hindu influences appear to have come from India through Kashmir. In other examples, purely Iranian details appear, and in some cases the faces exhibit definitely Chinese features. Thus the problems posed by the Khotanese group are indeed complex (see also KHOTANESE ART).

Even graver problems are posed by the Yötkan locality. Here the excavations were not carried out according to rigorously scientific methods, and it is therefore impossible to make definite statements concerning the thousands of objects recovered at Yötkan, since they probably date back to very different epochs. Even though it may be possible to find some kinship between the human and animal figures depicted and those of northwest India and even, apparently, those of Sogdiana and Khwarizm, still it is impossible to say what connection may have existed between the various examples from the different regions.

At Yötkan, a great many copper coins have been discovered, several of which, of Sino-Kharoshthi type, must date, according to Hoernle, from the 2d century at the latest, Chinese coins, perhaps of the Han epoch, have been found, as have others from the T'ang and several from the Sung epochs. This would indicate that there had been a resumption of trade relations before the end of the Sung dynasty in 1124. Subsequently, at least a century after the Moslem conquest, the locality was abandoned for unknown reasons.

Several sanctuaries were discovered at Dandan-uilik. From the one designated by Sir Aurel Stein as DI came a great assortment of fragments of stucco reliefs modeled in gesso. At one time they formed part of the decorative panels on the upper sections of the inner walls. They bear figures of bodhisattvas and gandharvas bearing garlands, floral ornaments, lotus leaves, and vine leaves with clusters of grapes. The interior walls also bore frescoes depicting persons larger than life size, under which ran a frieze adorned with lotus leaves and small figures of devotees. The shrine's outer walls, too, were decorated with frescoes displaying small figures of bodhisattvas or arhats, crudely painted against backgrounds of different colors.

Vestiges of decoration in relief in the same style as those of Sanctuary DI are also found in the shrine known as DII, in which were preserved some painted wooden panels that had fallen from the wall to the floor. They were probably votive offerings made by disciples. Five seated figures appear in one

of them — a bearded, four-armed figure in the center, and on either side of him two other figures playing musical instruments; another panel represents a dancing woman. These bits of historical evidence are highly reminiscent of Sassanian influences juxtaposed with Indian influences of the post-Gupta period, transmitted through Kashmir. They probably date back to about the 10th century. Besides these panels, vestiges have been found of frescoes, including one depicting a Khotanese legend, handed down to us by Hsüan-tsang, which concerns the widow of a naga. A plaster statue has also been found of a warrior clad in a coat of mail trampling a fallen enemy.

Some 65 ft. from the sanctuary a very old building was found to contain Buddhist manuscripts dating from the 7th or 8th century. In another shrine found nearby, which is referred to as DX and whose walls were decorated with a host of small seated figures of Buddha, painted panels were found, including one illustrating a legend, mentioned by Hsüan-tsang, concerning the introduction of silk culture into Khotan. In these panels, according to Stein, Persian influence can be detected. Reliefs, frescoes, and paintings on wood were contained in other sanctuaries uncovered in this same locality.

Since the Chinese documents go back to the years A.D. 781-93 and the Chinese coins also date from the 8th century, we may deduce that at the end of the 8th century the inhabitants abandoned the site, perhaps as a result of the disorders accompanying the Tibetan invasion.

The vihara, or monastery, of Rawak is the most important architectonic complex in the Khotan region. It is believed to be datable by some Chinese coins discovered there, bearing the inscription WU-SHU and thus attributable to the period of the later Han emperors (A.D. 25-220). It has been noted, however, that these coins remained in circulation until the end of the 4th century, perhaps even until the advent of the T'angs. Furthermore, the style of the sculptures uncovered there shows a closer affinity with Gandharan models than do those from any other site in the Khotan area. Hence they may be considered very ancient, and it is improbable that the problem will be further clarified; in any case, the shrine was probably abandoned in the period between the 3d and 7th centuries.

Enclosed within the vihara of Rawak was a stupa surrounded by a rectangular wall decorated inside and out with ranks of colossal stucco statues; this rectangular structure corresponds to the courts surrounded by chapels in Gandharan viharas. The height of the stupa, which had three stories of sun-dried brick, cannot be determined because of deterioration; it was covered with a layer of hard stucco, which was coated in turn with a layer of white paint. Rawak is particularly interesting for the magnificent series of sculptures that embellished the walls of the vihara; the large reliefs portrayed figures of Buddha and bodhisattvas of colossal size, among which were several smaller figures of deities or saints, and in certain places the walls were decorated with stucco plaques that formed a sort of halo above the heads of the figures or surrounded them like an aureole, if space permitted. These reliefs, which were painted but now show no trace of color except in the folds of the drapery, must have formed a highly impressive ensemble. To all appearances they were never intentionally destroyed but probably were abandoned long before the Moslem conquest.

The ruins of Niya, north of the river of that name, consist of a group of dwellings and a stupa of the conventional type. The type of construction is the same as that of Dandan-ulik, but stronger and larger. The center gives the impression of being much older. This impression has been confirmed by the discovery of wooden tablets bearing writings in Kharoshthi in the type of script used in the Kushan epoch; furthermore, the vestiges of floral-motif frescoes found there show points of contact with similar motifs from Gandhara. The predominance of Indian influence is also apparent in several articles of wooden furniture, including a carved chair. Undoubtedly the most important discoveries were an inscribed tablet with a seal bearing the figure of Pallas, documents written in Kharoshthi on leather, classically influenced seals bearing the standing figure of Athena Promachos, in profile and holding a thunderbolt in her hand, and figures of Herakles and Eros. Other

seals, on the other hand, are of local origin, including one bearing writing in Chinese. The existence of such seals confirms the bizarre mixture and multiplicity of influences that were at work in Serindia during the first few centuries of the Christian era; actually, these objects may be dated back to the 3d century or perhaps even to the 2d, in view of the fact that those in the classical style appear to be 3d-century Roman creations. We are also indebted to Stein for the discovery of Chinese documents written on wooden tablets, whose characters were traced with a pointed wooden instrument. The Chinese probably employed this system for writing on tablets before the invention of paper and brush; once introduced into Niya, it was long used for writing in non-Chinese languages.

These discoveries prove that the culture of this area derives from China and India. Several Chinese documents written in a type of writing used in the Han epoch further confirm the antiquity of this center, which must have been abandoned suddenly as a result of a shift in the course of the river near its terminus.

The ruins of Endere include a fortress, a sanctuary with a stupa, and dwelling houses. Although badly deteriorated, the fortress has helped to protect the remains of the temple and the stupa, which rested on a triple base and was covered with stucco. The temple, placed in the center of an enclosure, appears to be of the same type as those of Dandan-ulik; its sides were covered with figural decorations in stucco, only the lower parts of which remain. In the center stood a monument on an octagonal base, covered with a layer of gesso and adorned with life-size plaster statues which probably were seated; the faces of the base were decorated with frescoes, apparently more skillfully executed than the paintings of Dandan-ulik. The date of construction of this complex can be determined, owing to the discovery of important manuscript fragments written on paper in Sanskrit; the writing, being of Gupta type, must date, according to Hoernle, from the 7th or 8th century. There are also fragments in Central Asian languages, including several in Tibetan, leading to the conclusion that they could have been placed there only after the 7th century. Chavannes fixed the date of the Chinese sgraffiti on the walls as A.D. 719, basing his statement on information contained in one of them. These sgraffiti must have been made shortly before the Chinese abandoned the place as a result of the Tibetan invasion. Some of the dwellings were used by those who maintained the temple, and in these Stein found fragments of fairly well-preserved frescoes, including a painted panel bearing the figure of a seated Ganēśa, or of Vināyaka, with four arms; the other dwellings were used by the fortress commander and his garrison. The fortress was abandoned during the 8th century.

The ruins found in the Kashgar region, in contrast to those of the Tarim Basin, are completely uninformative, since the Moslems destroyed every vestige of their past splendor. Several stupas remain, for example, those of Mauri-Tim and Tōpa-Tim; but they reveal nothing of their original appearance.

The best-preserved ruin is that of a sort of truncated pyramid with a rectangular base and three levels, of diminishing size, standing near Mauri-Tim; the faces of this pyramid, of the same type as a pyramid at Astana, contain what remains of small cells or niches that must have contained statues.

Tumshuk. Scattered along the northern sections of the Silk Route, from Kashgar on, before it bends toward *Sho-chou* and Tun-huang, are such centers as Maral-bashi, Aksu, Kucha, and Qara Shahr, which were the cradles of a civilization that assumed the most diverse forms. Of these, only Qara Shahr and Kucha have yielded a considerable harvest of documents. But between Maral-bashi and Aksu, which provide no information whatever about the pre-Islamic period, Pelliot and Von Le Coq were fortunate enough to discover the ruins of an important monastic complex, the Turkish name of which, Tumshuk — doubtless given to the site after the Islamic conquest — had replaced the original one, which is still unknown. This explains why it cannot be identified in Chinese texts, despite its importance as a center; its ruins have not yet been excavated. There remain only the foundations of the Buddhist monastery

and temples, which were destroyed by fire in about the 10th century, perhaps at the time of the Moslem conquest.

In the area excavated by Pelliot was found a badly deteriorated group of monastery buildings, including a temple decorated in relief, from which several panels, miraculously well preserved, illustrate scenes from the life of Buddha. Under the debris Pelliot discovered a series of elements belonging to the structure, in particular, heads of the most diverse types. Von Le Coq, too, discovered some ruins farther north, from which he recovered several examples of the same type of work: reliefs executed in clay by means of molds, a considerable number of which were found (PLS. 472, 476, 477). The material used in modeling the heads had been highly compressed; probably the same technique was used in making the bodies, with the decorative elements, such as robes, girdles, and jewelry, superimposed in turn. Among these specimens are found heads of bodhisattvas, devatas, and lay dignitaries, strongly resembling one another; those of barbarians with beards and drooping mustaches; and figures of yakshas with prominent cheekbones and round eyes. The artistic value of these specimens, whose forms are coarsened by their progressive Sinitization, is very slight in comparison with the refined naturalism of their prototypes from Hadda and the specimens from Fondukistan.

Tumshuk is the last center in which Hellenistic influence prevailed. Greek art is suggested especially by a head covered with a lion's skin, a distant reminder of the Hellenistic figures of Herakles. Tumshuk is also the connecting link between the art of eastern Persia and the great artistic complex of Kucha: heads of bodhisattvas are found there, as well as at Kizil and Shorchuk; there are skulls reminiscent of the macabre representations in the Cave of the Navigator at Kizil; the theme of the skeletal torso representing the emaciated figure of Buddha or of some ascetic also recurs in the paintings of the Cave of the Peacocks and that of the Navigator at Kizil. The examples, found in different buildings and independent of one another, date from different periods. It is thus impossible to reconstruct a chronology on the basis of stylistic development, for the style originally was much like that of Hadda and Fondukistan and became heavier as it was patterned more and more upon Chinese models, the most recent specimens being hodgepodes, showing that the original tradition had been lost forever. The first objects date from approximately the 4th century, the last from the 8th; more precise chronology is not possible in the complete absence of dated documents.

Kucha and nearby centers. Kucha is a most remarkable complex, containing both authentic and individual architectural structures — in Duldur-akhur and Su-bashi, for example — and monastic complexes made by enlarging caves dug into native rock, as at Kizil and Kumtura. This second group is the more important today because of the discovery there of a number of outstanding frescoes and specimens of relatively rare sculpture. These complexes in the Kucha region, carved from the overhanging rock and eroded by the action of water, were created by the rulers of this small state, who wished to have temples like those of eastern Iran and India, or perhaps simply to build more lasting structures.

The caves of Kizil (PLS. 474, 475, 478–481), of varying importance, were explored by Grünwedel, Von Le Coq, Pelliot, and Oldenburg. Like those of Bamian, they face south. The many differences in plan and decoration are explained by the fact that they were planned in different epochs. They can be divided into three types: those of the first type are usually divided into two chambers preceded by a vestibule and are frequently barrel-vaulted and sometimes domed; those of the second type always have domes; and the third type has ceilings with corbeled false beams.

The caves were occupied during the period from the latter half of the 4th century to the end of the 8th century, and the frescoes that then adorned them were of two general styles. The earlier style, which survived until the middle of the 5th century, is closely related to that of the frescoes of Bamian, where the paintings decorating Buddha's niche, about 174 ft. high, are obviously of the same epoch. The influence of Gupta

art on these paintings is obvious, especially in the rendering of anatomical details. A plastic effect is obtained through the use of shadows, the contours being emphasized and certain details highlighted by chiaroscuro. The prevailing color scheme is made up of greens and browns, dulled, soft, and without strong contrast; the drawing, too, is less definite than in the second style. These traits appear in many of the caves, including those of the Painter, the Peacocks, the Navigator (PL. 483), and the Hippocampi (PL. 475). The second style, on the other hand, which flourished from the second half of the 5th century until the 8th, departs considerably from the Indian manner and that of Bamian; the dominant color scheme consists of malachite green and a shade of blue, both of which appear only in this style and are unknown at Bamian. The shadows, which in the first style were done in either bistre or orange, are rendered in this style exclusively in orange. Although the new style may have aimed chiefly at picturesque effects, even at the cost of lowering the quality of the drawing, the composition retains its strength and balance; the form becomes more angular, the line drier. Examples of this style appear in the caves of the Musicians, the Washing of the Feet, the Pigeons, and Mâyâ (PL. 478).

At Kizil, as elsewhere, the frescoes served a dual purpose, partly didactic and partly decorative. The decorative purpose is revealed in the striving for over-all effect apparent in the regular arrangement of the vaults, with sharp contrasts of color emphasized by the horizontal line of balconies. A desire for clarity is evident in the decoration of these shrines, the different subjects being arranged in successive bands or within rectangular panels. The art of Kizil is especially important for its representation of the Buddha legend (PLS. 478, 481, 484).

Indian influences reached Kizil through Afghanistan or perhaps directly through Gilgit; in any event, it is quite clear in the selection of pictorial subjects and in the attitudes and clothing of the persons in the paintings (PL. 471). The Greco-Buddhist influence is manifest in several iconographic details, and the Gupta or post-Gupta strain is evidenced in the sinuosity of the figures and the lightness and refinement characteristic of that art. Iranian influences are likewise perceptible, as early as the first style, in the decorative motifs and in certain details of the dress, which acquire greater emphasis in the second style. A late echo of the Hellenistic tradition is also detectable, for example, in the motif of garland bearers in flight. This conjunction of influences was grafted upon a purely local stock, as evidenced by the costume and racial type, the round face being an especially marked trait. However, every innovation from the exterior was developed and assimilated, frequently creating new forms that revitalized old themes destined to be diffused eastward as far as China and Japan.

Not far from Kizil, on the Muzart River, stands another center, Kumtura, which includes several cave temples. Here several of the caves are decorated with frescoes in which the first style of Kizil was copied; most of them, however, contain frescoes reminiscent of the second style of Kizil or a third style characterized by Chinese influences. All the temples are hollowed out of the rock except for a small temple built in the open in which was found, among other things, the lower portion of a statue of Buddha, standing and clad in stylized drapery similar to models from the Gupta period. The plans of the structures carved from rock are similar to those of the Kizil sanctuaries: they are predominantly rectangular with barrel vaults or square with a domed roof.

There are abundant examples of the first style in a domed cave facing the second valley: the predominant color scheme in its paintings consists of green, brown, and sienna; the figures depicted are like those in the Cave of the Peacocks and the Cave of the Painter at Kizil. Examples of the second style are found in the Cave of Nagaraja, with the same stylistic traits and colors as are evident in the paintings in this style at Kizil. Finally, specimens of the third style are found in the Caves of Nirvana, of the Apsaras, and of the Kinnaras, where the influences of Chinese art are apparent. This is particularly true of the floral ornament, which is typical of art of Chinese derivation in Central Asia and in Bezeklik, and of the figures floating on

clouds, stylized in a manner also found in T'ang-period painting at Bezeklik and Tun-huang; occasionally the figures, with their round faces and slanted eyes, are of the Chinese type, as are the trees, which are rendered naturalistically and are free from the conventional stylization typical of the Kizil paintings. A typically Chinese impress also appears in the rendering of mountains; the landscape in general acquires great importance in the composition, whereas there is always a preponderance of human figures in those cases where Indian influence predominates, architectural and landscape representation in such paintings being reduced to mere suggestions. The colors used here are bright and tempered, and the composition is subdued and airy, quite different from that of the Kizil paintings, a fact readily apparent when a comparison is made of the manner used in the two centers to portray the Bodhisattva Maitreya among the surrounding divinities. At Kumtura, there are few figures; there is contrast between space and mass, each figure retaining its full expressive value. Kumtura was the farthest point of penetration of Chinese influence toward the West, and in it occurred the confluence of Indian and Iranian influences with those of China.

At Duldur-akhur, not far from Kumtura, is the site of a complex of monastic structures systematically arranged around a central court in which there are several separate stupas. In the ruins of these buildings, destroyed in a fire, were recovered fragments of statues molded of stucco mixed with straw or tow, as well as wooden sculpture (PL. 473) and some frescoes. The monastery was probably sacked and set aflame; there are, in fact, traces of intentional abrasion in the gilding of the frescoes. It is difficult to get a clear idea of the architecture of this interesting monastic complex, which as a whole recalls the monasteries of Gandhara. The archaeological finds are reminiscent of classical works: for example, the head of a bodhisattva, damaged by the fire, has an agreeable coiffure topped by a laurel crown; and another similar head, made of a mixture of clay and straw, its face covered by a coat of white plaster, bears traces of black paint outlining the hair, eyebrows, eyelashes, and whiskers. The Chinese influence is apparent in the wooden sculpture; one example is the use of gilded aureoles, fragments of which still remain. In other specimens, for example, certain figurines of expert craftsmanship, it is rather the Western influences that are evident; in still others — for example, a fragment showing a griffin with gaping jaws and a menacing expression — the influences originating on the steppe are stronger. Fragments of some frescoes show a certain resemblance to the first style of Kizil, whereas others show the stamp of Chinese influences felt in these areas in about the 8th century.

Remains of monastic complexes have also been preserved at Su-bashi, on both sides of the river, in the northern part of the Kucha oasis; there are many structures, including several large stupas of various types (PL. 482). Outstanding among the items found there are stucco reliefs (PLs. 476, 477) and frescoes; the former show signs of the remote influence of Greek prototypes, perhaps transmitted through Hadda, on which are superimposed, as attested by the elegance of form and the attitudes of some of the figures, Gupta influences. The most important of the frescoes is of great size and is obviously patterned on the first style of the Kizil paintings.

The Kucha group also includes the ruins of Hisar, where a temple, later destroyed by fire, once stood; it was decorated with frescoes. There was formerly a temple at Tajzik Karaul, alongside the cave temples, which are adorned with frescoes. In these frescoes, some figures in sinuous poses resemble the style that is also found at Kumtura, showing Indian influence, whereas others reflect the influence of Chinese art more strongly, without, however, achieving the picturesque effect of the two major temples. The ruins of Kizil-shahr and Tonguz-bash, too, should prove interesting, but so far no excavating has been done there.

Qara Shahr (Karashahr). Important as Kucha is, the ruins of *Qara Shahr* are no less worthwhile. Indeed, it offers a complex of many temples and cave temples which S. Olden-

burg has named *Shikahim* and German archaeologists have called *Shorchuk*. In the temples several fragments of statuary have been found; S. Oldenburg also found the remains of a *Parinirvāṇa* there, done in the round, in which Indian influences persisted. Important frescoes were also found in the cave temples, whose structure shows some variations from the usual rectangular plan of the second Kizil style.

The interest of the excavations at *Shorchuk* lies principally in the discovery of a great many fired-clay molds, whose existence shows how not only the head but also the torso and other parts of the body, crudely roughed out beforehand, were molded in wet clay. The reliefs were generally affixed to the wall, then given finishing touches with a chisel, and finally gilded. The stamp of Indo-Greco-Buddhist art predominates, especially in the smaller statuary, which recalls that of Hadda and Taxila but shows more stylization than that of Tumshuk. The elegance of the bodies and the anatomical details visible beneath the drapery betray the influence of Gupta art. These characteristics at times contrast with the painted decoration, which is unmistakably of Chinese type.

This painting, of exceptionally high quality, with its rich, dark colors — predominantly yellow, brown, rose, and green — differs from the Kizil art, which has bright, light colors. There is an extraordinary variety of poses and physical types in the figures, and elements present in Murtuk appear here in certain traits of the painted decor. Indeed, the style of *Shorchuk* is a transitional one between the second and third styles of Kucha, certain themes of which survive, although with variations. The donors are of a different type from those of Kizil and are more like the donor figures seen in some temples in Kumtura; some wear white clothing, like that of the Manichaeans, are obviously of Mongol type, and wear their beards either pointed or following the line of the jaw. In their decoration the vaulted roofs of the shrines call to mind the characteristics of some of the Kizil grottoes but are somewhat differently arranged, with a *rosace* of floral motifs in the center, surrounded by stylized motifs of stems and foliage.

Turfan. Like Kucha, this oasis was first inhabited by Indo-European peoples and then by the Uigurs. Predominant in it, with the usual effect on its art, were first Buddhism, then Manichaeism and Nestorianism, and subsequently a restoration of Buddhism (PL. 487). Most of the Buddhist-influenced Indo-European cultures in the Tarim Basin disappeared when the Moslem conquest swept over them; in the region of Kucha and *Qara Shahr* they appear to have persisted longer, thanks to the Uigurs, but even there they finally succumbed. The oasis of *Turfan*, however, seems to have remained immune to destruction. Although the 15th-century rulers of the place bore Moslem names, many of its inhabitants remained faithful to Buddhism, at least if we are to give credence to the documents of the Ming period, which state that at *Khocho* (*Kara-Khōja*) several Buddhist temples still existed, and to the embassy from *Shan-koh* in 1420, which mentions the presence in *Turfan* of many believers in Buddhism, who "have great temples for their idols." These statements suggest that Buddhism survived there until a comparatively late time, though it is not yet possible to determine just when it died out. In any case, this explains the comparatively well-preserved state of the religious sites and the considerable number of documents of all kinds discovered there. The *Turfan* oasis consists of a complex ensemble of religious and civil monuments, including a great many watch-towers, citadels, and ancient royal residences, around which sprang up the principal centers of the Uigurs. Examples of these are *Idikut-shahri*, "the city of the *Idikut*," and *Khocho*; in addition there are the cemeteries, such as that of *Astana*, and religious centers, such as *Murtuk*, *Bezeklik*, and *Senghim-aghiz* (PL. 490), to name only the most important.

Although the monuments still preserved at *Khocho* and *Idikut-shahri* are highly important from the architectural point of view, they have unfortunately been partially despoiled of the decorative elements they undoubtedly had in the past. We must look to the religious centers and burial grounds if we are to get a true picture of the art that flourished in the *Turfan* area.

These cemeteries are numerous because the region was always densely populated. One of them, Qosh-gumbaz, near Idikut-shahri, contains tombs with a circular interior and a domed roof. Their decoration has not survived, but fragments of frescoes have been found, as have a great many metal objects, such as arms and coins of the epoch extending from the T'ang and Sung dynasties to the beginning of the 13th century. Many illustrated manuscript fragments, particularly Manichaean ones, have been found there. It is not improbable that some of these tombs served as warehouses. Much more interesting is the cemetery of Astana, because of the objects found there, although most of the tombs (of a period extending from the second half of the 6th to the first half of the 8th century) have been pillaged. The food offerings intended to accompany the dead were sealed in gray or black pottery vessels with bands of ornament. Reminiscent of the Greek custom of the obol for Charon is the coin which frequently is found placed on the mouth of the deceased: the coins used were either Sassanian or gold coins of Byzantine type. Inside the tombs were found fired-clay tablets bearing inscriptions dating mostly from the 7th century; these dates have since been confirmed by the presence of Chinese documents, written on paper, found in the tombs themselves and dating from the end of the 7th or the beginning of the 8th century. The tombs probably were those of Chinese or natives who had adopted the Chinese way of life. Sometimes the tombs are more elaborate, with a vestibule preceding the burial chamber. Important objects have been found in them, including funerary statuettes similar to those found in China of the T'ang epoch. Some are painted and represent horses and horsemen accompanied by women on foot. The faces are of Chinese type and follow the T'ang standard of beauty: they are generally coarse and have round, full cheeks and a small mouth. These tombs also contained fragments of paintings on silk, including one specimen which, although fragmentary, apparently depicts a musical festival; there were also fragments of cloth, of Sassanian type, used to cover the face of the corpse.

The prevalence of Chinese influences is confirmed by the style used in painting and the plastic arts, examples of which remain in the religious monuments. A highly important and comprehensive iconographic documentation is provided by the centers of Murtuk and Bezeklik, which were studied successively by German, Japanese, Russian, and English expeditions, the latest headed by J. Hackin. The most important center, Bezeklik, consists of two sectors: one, consisting of architectural structures, was erected on a level space with a northward orientation; the other, cave temples carved in the rock, was oriented toward the west. Unfortunately, the first excavations were unsystematic and no record was kept of the places from which the frescoes were taken, with the result that many of them, now located in Germany, the Soviet Union, and Japan, cannot be identified as to point of origin (PLS. 484, 485, 489).

In most of the sanctuaries, the whole wall surface is covered with frescoes influenced primarily by the Chinese and generally dating back to the period of Uigur domination following the T'ang hegemony, an epoch in which Chinese influence held uncontested sway. The Tibetan domination of the Tarim Basin, although very short-lived, introduced into their iconography the representation of Tantric divinities, which are also found in Tibetan art and during this same period enjoyed great popularity in China also. The art of Bezeklik is therefore very different from that of Kizil and frequently differs from the Sinified art of Kuntura. Not only is the appearance of the donors different — here portrayed as bearded men of Mongol type and women with strange coiffures wearing long tunics — but frequently the subjects themselves are altered: the scene of Buddha's preaching at Benares is frequent, and there is a tendency to substitute Avalokitesvara for the historical Buddha.

According to Hackin's most recent studies, three phases must be differentiated in this complex: a first period of Buddhist domination, covering the 7th and 8th centuries, in which the influence of Kucha was felt, the most prevalent manner being that reflecting strongly the influence of T'ang painting; a second period, covering part of the 9th century, marked

by Manichaean domination of the Uigurs, with a new influx of Iranian influences; lastly, a third period of Buddhist supremacy from about the 10th to the 11th century or perhaps even later. During the third period some decadence set in, and for the first time direct representation of some of the Tantric divinities appears in certain temples.

Murtuk, which is near Bezeklik and obviously belongs to the same epoch, presents a very different style, however: Chinese influence is not predominant, but the floral ornamentation adorning the vault of the third cave, for example, is very much like the decoration of the Buddhist steles of the T'ang period. Indian influence becomes evident: in the figure of Buddha, for example, seated in the European style and accompanied by a bodhisattva of purely Indian type holding a vase. It is especially evident in certain compositions, no longer illustrating episodes in the life of Buddha or the Jātakas, but legends from Mahayana Buddhism. In the flames surrounding Buddha and in the coiffure of one of the donors the influence of the art of Kizil and of Irano-Buddhist art is obvious, with the large aureoles so like those of Bamian.

Particularly noteworthy among the less important sites is Senghim-aghiz, in whose wall paintings an extraordinary mixture of influences is apparent. The figures of nakshatras, female lunar divinities, with their fluttering scarves, illustrate, in Grousset's words, "the most felicitous synthesis of Indian sinuosity, Hellenistic elegance, and Chinese grace." The monasteries where these figures are found are fairly well preserved and the plan is still recognizable, as are several of the barrel vaults and domes.

Toyuk, too, offers imposing ruins of temples and sanctuaries hollowed out of the rock in the walls of a gorge. Klementz was the first to describe these, and German and French expeditions followed. Aurel Stein discovered fragments of stucco reliefs there, of various types and sizes, including a great many small heads, the remains of figures of monsters, and ornaments in the form of necklaces. In the sixth sanctuary a painted ceiling has survived which portrays a seated bodhisattva surrounded by rays, with floral decorations similar to those seen in the Turfan sanctuaries.

Centers of the Chinese area. The great archaeological centers lying farther east are indisputably within the area of Chinese art, although geographically they are still a part of Central Asia. Although Lou-lan was a Chinese colony, flourishing at the beginning of the Christian era, although Tun-huang has all the characteristics of a monastic complex whose artistic expression is in the Chinese manner, and although the dead city of Karakhoto (lying farther east and dating from more recent times, since it must have been in its prime during the Hsi Hsia dynasty and up to the end of the Yuan dynasty, 1368) contains evidences of strong Chinese influence — even so, influences originating in Serindia, often quite powerful ones, were at work in this area.

Lou-lan is particularly noteworthy for its cemetery, located on a hill where tombs have been found from a period earlier than the time of the Chinese population's abandonment of the site, which took place during the 3d century. This site is particularly interesting for the fabrics and household articles found there. Besides locally produced woolen fabrics and carpets, numerous silk fabrics of Chinese origin have been found, in which there are recurring motifs of animal figures surrounded by volutes representing clouds or perhaps floral elements. There are also motifs of clouds and flowers alone, as well as geometric motifs, particularly lozenges. Among the woolen fabrics have been found fragments of tapestry which, in contrast to the silks, frequently show characteristics linking them to Hellenistic art and are unmistakably related to the Miran frescoes, the late-period Coptic tapestries made in Egypt, and Byzantine and Sassanian textiles.

The Tun-huang complex was regarded as of prime importance when Pelliot and Stein first made it the object of their researches. Today, after the discovery of other sanctuaries of the same type at Wu-ko-miao, not far from Tun-huang, at Ping-ling Szu and farther east in Kansu and elsewhere, a much

more modest evaluation of the importance of its wall paintings seems called for. This does not mean, however, that its value as a whole is not very great, as much for the frescoes which Chinese archaeologists are gradually bringing to light from under a layer of ugly paintings of comparatively recent vintage as for the many paintings on silk hitherto concealed in the famous sealed cave. The frescoes belong to a period extending from the 5th to the 8th century and may be divided into two groups: the first group, of the Wei period (between the 5th and 6th centuries), was executed in a style that had reached a degree of perfection unsurpassed thereafter; the second, of the T'ang epoch (between the 7th and 8th centuries), is characterized by greater heaviness, particularly in the contours, and in the over-all effect shows the earmarks of a provincial art that can at best be considered the product of skilled craftsmen. The paintings on silk, which are of the T'ang epoch, contain many examples that may be counted among the masterpieces of the period. Here, too, Western influences, albeit in somewhat disguised form, are present, especially in the rendering of certain figures and the clothing, above all the scarves, the treatment of which recalls the paintings of Kucha or Turfan.

The fragments of sculpture found by Stein at Karakhoto among the ruins of a sanctuary that stood in the western section of the city were part of the rich stucco and ceramic decorations which formerly adorned this structure. Certain small decorative motifs in stucco suggest points of contact, in both subject and style, with details of the friezes in relief found in the sanctuaries at Shorchuk; the fragments of paintings discovered by Kozlov seem to show distant echoes of influences from the West.

The regions of outer Iran and Central Asia in which there were fixed communities underwent a remarkable artistic development which, although not very original, still is extremely interesting by virtue of the great number of influences evident there. Of this development, we know only the period of approximately a thousand years in which Buddhism and the other soteriological religions spread over Central Asia. The discoveries made in Sogdiana and Khwarizm, however, justify hopes that new discoveries may provide information on the cultures of the permanent communities established between the Pamirs and the Yellow River, which must have developed over a period of several thousand years, and thus make it possible to establish a connecting link between the West and the Far East from an earlier date than the moment when the first direct contacts were established between western Asia and China under the Han dynasty.

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Louis HAMBIS

Illustrations: PLS. 471-490; 1 fig. in text.

ASIA, SOUTH: TRIBAL STYLES. The two great peninsulas of South Asia contain an unparalleled diversity of cultural and ethnic groups. Historic civilizations of great antiquity and renowned literary traditions have long existed side by side with the primitive way of life of the forest tribes, and between the extremes of sophisticated urban populations and seminomadic food gatherers extends a wide range of cultural levels. The arts of the groups with tribal structure are treated here under the general headings of India and Indochina.

SUMMARY. India (col. 839): *General considerations; The aboriginals of the south; The tribes of central India; The tribes of the north-east; Tribal art and popular art.* Indochina (col. 848): *General considerations; Painting and adornment of the body; Basketwork and pottery; Bamboo and woodwork; Textiles; Metalwork; The principal decorative motifs.*

INDIA. General considerations. Unlike other advanced civilizations, Hindu culture has favored the persistence of a great variety of subcultures and local styles. Geographical features that impeded the development of communications have contributed to the isolation of small ethnic groups with their own cultural characteristics. In the sphere of art, too, the great traditions arose, blossomed, and decayed independently of the art of the aboriginal tribes dwelling in hills and forests remote from the historic centers of civilization, just as the social structure and spiritual heritage of the various tribal groups have remained distinct from the worlds of Hinduism (q.v.), Buddhism (q.v.), and Islam (see ISLAM; INDO-MOSLEM SCHOOLS; MOGHUL SCHOOL). The relation of tribal art to the Indian classical tradition is not comparable to that between the folk arts and the fine arts in the West, for unlike the peasantry and the urban populations of Europe, the aboriginals and the advanced Hindus are not heirs to the same traditions. It is not unlikely that in ancient times some stylistic features of tribal art styles were incorporated in the artistic traditions of Hindu India, but the perishable character of the media of the primitive artist prevents us from tracing such developments. The one exception is the similarity, pointed out by V. Elwin, between geometric and symbolic designs found on the painted pottery of the Indus civilization and the decorative motifs used by tribal wood carvers of central India. In this sphere there seems to have been some continuity over the millennia, but no comparable parallels have been found in the field of decorative art.

For the purposes of a consideration of tribal art, the Indian aboriginal populations can be roughly divided into three main groups: the primitive forest tribes of Southern Deccan and Western Ghats, the large and in many respects heterogeneous group of the central Indian tribes, and the hill tribes of the northeastern frontier areas. Each of these groups consists of a great number of tribes differing in language and level of material advancement, but techniques and subject matter of artistic expression are shared even by ethnically and linguistically distinct members of such groups.

The aboriginals of the south. The most primitive among the southern Indian aboriginals are such forest folk as the Chenchu of the Nallamalai Hills, the Kadar of the hill forests of Cochin, and the Malapantaram of Travancore. Common to all these tribes, who represent in their physical features no less than in their ecology an extremely archaic ethnic stratum, are a seminomadic way of life, an economy based on hunting and food gathering, and the possession of little movable goods. Unlike primitive hunting tribes of other continents, the southern Indian aboriginals do not produce paintings or engravings on rock faces or the walls of caves, nor do they fashion and decorate articles for ritual use. The only objects such tribes as the Chenchu ever embellish by incised or carved ornamentation are small utensils and instruments such as combs, spoons, and bamboo vessels. A sense of the pleasing effect of a regular pattern, however, expresses itself in the systematic use of the white and green sides of split bamboo in the weaving of wattle doors, or even in the arrangement of alternating bundles of old and new grass in the thatching of huts. Despite the small number of decorated objects, it is possible to distinguish two different styles, one geometric, the other naturalistic. The geometric patterns are engraved or cut in relief. The designs most frequently employed are recurrent zigzags and crosshatching, both oblique and vertical, executed with the point of a knife or, more often, with a small iron spike. This technique is also used for the type of ornamentation that tends toward naturalistic designs, such as patterns made up of conventionalized animal figures. Compositions of a descriptive character are rare, examples being simple hunting scenes engraved on gourds.

Among the forest tribes of southwestern India artistic expression is also confined to the decoration of small articles daily use, especially bamboo combs worn in the hair as ornaments. The upper part of these combs is usually covered with patterns of incised geometric designs, some of which are elaborate and contain some naturalistic elements. On the combs of the Kadar of Cochin, for instance, horizontal band patterns often enclose a square containing stylized plants.

Among the Chenchu, as among the tribes of the southwest there is no link between visual art and ritual. The only symbols marking the altars for sacrificial offerings are rough stones.

The tribes of central India. The aboriginals inhabiting the zone of hilly country extending from Saurashtra in the west across central India to the highlands of Orissa and Bihar have developed more extensively in the field of visual arts, favored by the stability of their agricultural way of life. However, although the villages of such tribes as the Bhil, Korkus, Gonds, and Oraons contain a good many examples of wood carvings, the round as well as in low relief, representative art does not play a major role in the tribal cultures of central India. Compared to African or Oceanic plastic art, the Indian specimens are few and of little esthetic value. According to V. Elwin the explanation for this relative poverty of artistic inspiration lies partly in the general depressed state of populations that for centuries have been subjected to political and economic pressure from materially more advanced peoples, and partly in the influence of Hindu attitudes, which relegate many crafts to the lowest castes and the untouchables. But apart from such external reasons, there remains the fact that the central India aboriginals find esthetic satisfaction more in the elaboration of song and dance than in the plastic arts.

Related to their emphasis on the beauty of the movement of dancers is the prominent role played by the decoration of the body as an incentive to the development of certain applied arts. Combs, hairpins, ear studs, necklaces, and bangles as well as whole headdresses are often richly decorated and are minor works of art in themselves.

The adornment of the body and the weaving of multicolored skirts of homespun bark fiber exhaust the artistic effort of some tribes, such as the Munda-speaking Bondo of Orissa, the villages and houses being undecorated and the sanctuaries without any symbol other than crude stones. Other tribes of comparable cultural level have produced excellent wood sculpture and domestic or ritual objects decorated with complex reliefs, some of which are exclusively ornamental while others have symbolic value.

Central Indian tribal art is not primarily religious, and although ritual objects often provide opportunity for decoration there is no indication that any specific style was reserved for ritual purposes. The Muria Gond of Bastar apply their skill in wood carving equally to the ornamentation of such minor articles as combs and tobacco boxes and to the carvings on the pillars of youth dormitories and the frames of ritual swings.

Most private dwellings are devoid of any major ornamentation. Among many tribes the houses are flimsy, temporary structures, and even durable ones are decorated only if the owners are rich and employ an artisan to carve the panels of the lintel of a main door (PL. 492). The principal outlets for the practice of decorative art are provided by the youth dormitory and the monuments for the dead. The dormitory is almost invariably a public building, but the carved wooden posts erected in memory of deceased relatives are the responsibility and property of individuals. In the youth dormitories of the Muria Gond of Bastar and the Juang and Bhaya of Orissa, pillars and doors are often decorated with carvings in high relief, partly geometric and partly naturalistic. These carvings depict men and animals, singly or in such scenes as a hunt, a quarrel between several persons brandishing arms, or a group of dancers with musical instruments. The treatment of the human figure in such carvings does not follow a uniform principle; many are realistically represented, but there are also conventional, highly stylized representations. Thus the human figure may be represented by a single triangle or by two triangles.

arranged so as to form an hourglass shape with arms and legs attached. Sometimes the part stands for the whole, as when a pair of breasts or a vulva represents a woman; but in these cases it is often doubtful whether a representation of a woman is intended or whether the part has assumed an independent meaning as a fertility symbol.

The paintings on the whitewashed walls of youth dormitories are usually of much lower artistic quality than the carvings, since they are casual sketches rather than carefully planned designs. Thus the wall of a Muria dormitory may be covered with a wild array of human and animal figures, representations of plants and flowers, and geometric patterns.

Another type of wall decoration is the clay relief made by the Gond and Pardhan women of the Mandla District of Madhya Pradesh. These reliefs, modeled while the wall is being built and the mud is still damp, include representations of animals, plants, or geometric shapes enclosed within a frame of simple or ornamentally elaborated lines.

Memorial monuments, which offer wide scope to the stone-cutters and wood carvers of many aboriginal tribes of central India, are found in a zone extending from Gujarat in the west to Bengal in the east. They are erected in honor of deceased kinamen either at the time of the funeral or, more often, in the course of a subsequent memorial ceremony. In underlying purpose these monuments resemble menhirs or dolmens commemorating the dead. But whereas menhirs are unworked stone slabs, the wooden pillars are usually ornamented with carvings in relief or even in the round, and the stone tablets of such tribes as the Bhil bear figures and designs carved in relief. In some tribes — for example, the Kolam of Adilabad — menhirs and wooden pillars are alternative ways of honoring the dead, and this interchangeability of two symbols differing in form but similar in content suggests that the significance of the wooden memorial pillars may lie within the orbit of eschatological ideas specifically associated with megalithic ritual.

The most impressive of the wooden memorial pillars are those set up by the Bison-horn Maria of Bastar (PL. 491). These are usually square posts with the sides completely covered by naturalistic carvings depicting men dancing, hunting, riding, or ploughing, and large groups of such animals as deer, fish, and tortoises. The top of the pillar usually bears carvings in the round of birds, crocodile heads, or geometric shapes. The most noticeable feature of the reliefs on the sides of the pillars is their realism. Unlike much of the tribal art of Assam (see below), conventional symbols of wealth and fertility are rarely used. Also naturalistic are the memorial tablets of the Bhil of western India, which usually bear the image of a man on horseback (PL. 494), and those of the Korkus of Berar, whose reliefs show the sun and moon and lines of dancing men.

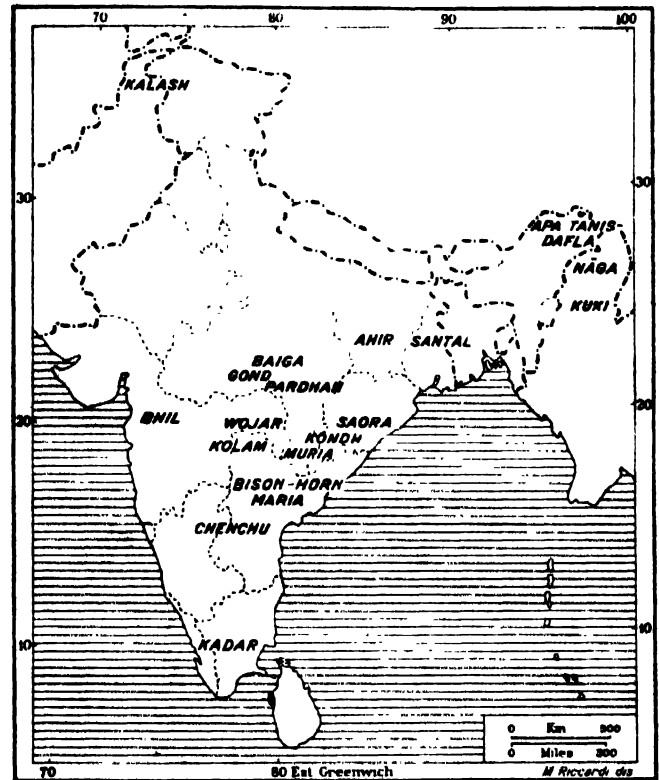
The purpose of the memorial pillar is partly to appease and flatter the spirit of the deceased and partly to proclaim the wealth and thereby raise the prestige of the surviving kinamen. Although in some megalithic cultures the menhir is thought of as a seat of the deceased's spirit, and although the Kolam, whose memorial stones and posts are of the simplest kind, treat them as if they stood for the deceased, the elaborately carved pillars and tablets of the Muria Gond, Korkus, and Bhil are tributes to the departed rather than symbols of the deceased's personality. The idea of a carved post as a symbol of a person occurs in central India, too, but in a different context. Thus a wooden post in the sacred grove represents the founder of a Santal village, and it is a common tribal custom to put up carved posts to represent the victims of tigers.

Totemistic associations between clan groups and animal species are widespread among the aboriginal peoples of central India, but only the Oraon of Bihar make models of such totem animals. These images, carved in the round in wood in a naturalistic style or modeled in clay and preserved by members of the clan to which the village founder belonged, are considered so sacred that their owners offer them libations of beer and animal sacrifices.

There is no uniformity in the tribesman's attitude to the pictorial representation of spirits and divine beings. On the whole, deities are seldom represented by anthropomorphic

images, and in this respect tribal religion differs radically from popular Hinduism (q.v.). This reluctance to portray the deities in wood, stone, or paint deprives tribal art of a stimulus that had a powerful effect on the development of Hindu art.

The importance and the emotional impact of a deity stand, usually, in an inverse relation to the frequency of pictorial representation. Among the Raj Gond of Adilabad, for instance, neither the creator god Bhagwān nor the powerful deities of the individual clans are ever represented in anthropomorphic form, although during certain rites the symbols of the clan deities, a spear point and a fly whisk, are treated as images



Distribution of tribal groups in India.

animated by the presence of the god. The Earth Mother, too, annually propitiated at the time of sowing, is without sanctuary or image. Other deities have shrines, but these contain the accessories of the cult, such as sacred weapons, votary gifts of clay animals, and lamps and incense burners, rather than images of the deity, who may be represented by a bunch of peacock feathers or some other nonanthropomorphic symbol. Minor local deities may occasionally be represented by posts bearing the crude angular carving of a human face, but there is nothing in such representations to inspire the imagination of the worshippers; among most tribes there is no positive and persistent relation between religion and visual art.

There are, however, some exceptions to this lack of integration between ritual and artistic idioms, and one major example of religious inspiration stimulating the development of a distinct branch of primitive Indian sculpture has been analyzed in great detail by W. G. Archer. It occurs among the Ahir, buffalo herdsmen of Bihar, a population now regarded as a Hindu caste, but in style and sentiment close to the tribal peoples of central India. Stone and wooden images of the cattle god Bir Kuar occupy a central position in their ritual life (PL. 493). The images are put up in order to obtain the favor of the god and secure his beneficial influence on the fertility of the herds. Each Ahir village has a traditional style of stone or wood sculpture, and although in some places both media occur side by side, in others only one is used. The

images vary in detail, but each medium is associated with a distinct style. The shape of the wooden sculptures seems to be developed from the natural form of a round wooden post. The head is the rounded top of the post; the arms, indicated by curving lines or carved from the post in low relief, are welded with the torso into a single compact form; and the legs are either omitted or conventionally indicated in subnormal size. This distortion is probably not incidental but is inherent in the style, which not only tends to reduce natural forms to geometric patterns but emphasizes the head and torso to produce an impression of superhuman power.

The style of the Bir Kuar images in stone is of necessity different. Essentially linear, the figure of the god, represented in high or low relief, often appears simply as a flat surface placed on a flat background.

To produce these sculptures the Ahir graziers commission simple artisans, stonecutters and carpenters, to whom the occasional making of a Bir Kuar figure, occurring on an average of no more than once in two or three years, is a casual variation of their routine work which offers little scope for the growth of artistic skill. Working on strictly traditional lines, they do not consciously strive for artistic self-expression.

Another exception to the widespread reluctance to represent tribal gods in anthropomorphic shape is provided by the Saora, a Munda-speaking tribe in the highlands of Orissa. Unlike other Orissa tribes of the same language group and similar cultural level, such as the Gadabā and the Bondo, the Saora depict gods and spirits both by carved images and by wall paintings. The images are crudely carved figures, resembling in their disregard of anatomical detail and their rugged strength the images of the Ahir cattle god. Unlike most wooden Bir Kuar statues, whose tree-trunk shape necessitates a distortion of the lower extremities, they often have separated legs and strongly emphasized sexual organs. Some are placed in shrines, but others stand in the open, usually close to a path (PL. 494). Their purpose is not to represent a god or provide a deity with a visible seat, but to propitiate deities or, according to Elwin, to "keep the gods away."

The paintings and drawings on the walls of houses are a feature of Saora religion without an exact parallel in other tribal societies. Their purpose is not decorative; rather they are painted to honor and propitiate gods, spirits, and ancestors and thereby to ensure health and prosperity, increase the fertility of the crops, and avert danger from magic. They may be painted by the householder, but more often a shaman or seer is called in to undertake the work. Rice flour mixed with water provides the white paint, which when dry stands out sharply from the red mud wall. The Saora themselves regard these paintings as the "houses" of spirits, and this is probably why they are invariably square, rectangular, or circular and filled with the figures of men, animals, and objects representing the crowded household of a deity or the establishment of an ancestor in the underworld. The wealth of servants, animals, and equipment is intended to flatter the spirits. The paintings on the whole are realistic and the scenes depicted are descriptive rather than symbolic. They reflect the Saora's idea that the world of gods and spirits closely resembles the world of men and hence can be expressed in naturalistic terms (PL. 496).

The Santal, another Munda-speaking tribe, are famous for the elaborate wood carvings with which they adorn their marriage litters. These heavy wooden palanquins, made to the order of rich men, offer scope for a wide range of carvings in the round or in low relief. The broad surfaces of the panels are filled with an array of animals and with human figures engaged in domestic, agricultural, and ritual tasks (PL. 493). The scenes and the arrangement of figures in long sequences recall the friezes cut into the stone walls of Hindu temples, but the crude treatment of the human form, angular and devoid of polish, clearly puts this carving into the category of primitive Indian sculpture, uninfluenced by the sensuousness and technical refinement of classical temple sculpture. The marriage litter is a prestige symbol, like the less-elaborate carved marriage posts set up by such tribes as the Raj Gond. These posts usually form the central pillar of the sun shelter under which

the wedding rites take place and remain there for some years as a reminder of the lavishness of the festivities.

Unlike the Nāga artist (see below), who may produce minor carvings for the pleasure of creation and without definite expectation of material reward, the central Indian tribal wood carver usually works for a specific purpose; he is paid a fixed sum not dependent on greater or lesser artistic value, and his position is that of an artisan rather than an artist.

The mask, an art form which in other parts of the world, such as western Africa and Melanesia, accounts for the most original and characteristic creations, plays only a very minor role in tribal India. The greater number of aboriginal tribes, including all the southwestern forest tribes, have no masks whatsoever, and even where masks are occasionally produced and worn, they have little ritual and emotional impact. Indian aboriginals have neither secret societies nor initiation ceremonies surrounded with an atmosphere of mystery requiring the disguise of some of the participants or the representation of supernatural beings by masked men.

The masks occasionally used by the Gond, the Pardhan, and the Baiga mainly serve the purpose of entertainment (PL. 494). Some are made of gourds painted to resemble faces, but most of them are of carved wood. The carving is almost invariably extremely crude, and there is little attempt to give the face a specific expression. White, red, or black paint may be used to accentuate the eyes and mouth, or the whole face may be painted in one or several colors. Sometimes there is a conscious effort to caricature certain types of strangers with whom the tribesmen have occasional dealings, but artistically these masks have little importance. Although not of major ritual significance, masks among such tribes as the Gond are nevertheless not of an entirely secular character. They are used in ceremonial dances in which divine figures are represented symbolically, and in some cases they are among the articles which at the beginning and end of the dancing season are the object of a sacrificial rite.

Among the Kondh of Orissa, whose human sacrifices were suppressed in the 19th century, masks made of gourds decorated with colored beads are used to represent human skulls as offerings to the Earth Mother.

The principle of substitution of a model for a real creature or object underlies also the custom of placing clay figures of animals as votive offerings on the altars of village deities and local gods. Clay models of such animals as oxen, elephants, and horses are presented especially to the goddess entrusted with the protection of the village or region. Such votary ceramics may be the size of a toy, or they may stand several feet high. In general, these figures are not of great artistic value, and the technique of modeling them in thin clay with large hollow spaces in the body and limbs sets definite limitations on stylistic development. They are considered as expendable ritual accessories and not as works of permanent value. They remain in shrines or at open-air sanctuaries until they are broken or decomposed.

Unlike many other primitive races the Indian aboriginals have no tradition of pottery as a medium of artistic expression. Most pots, whether made by hand or turned on the wheel, are undecorated, and none is painted.

Metal is rarely used as a medium for the tribal artist. Certain castes of semitribal brass founders of central India, such as the Wojar, whose association with Gond tribesmen is undoubtedly of long standing, employ the lost-wax process to make ornaments and simple ritual objects, but few of their products have intrinsic artistic merit. The brass figures of animals, riders, and carts made in a simple naturalistic style by low-caste brass founders for the Kuttia Kondh of Orissa are an exception. They are known as "marriage toys" because they are used as gifts at weddings, but they also have an unexplained ritual significance. At the time of making sacrifices, offerings are placed before these figures; if misfortune befalls the household, however, they may be thrown away as having proved ineffectual.

The tribes of the northeast. The hill regions of Assam, which are the home of numerous Tibeto-Burman and Mon-Khmer-

speaking tribes, have never been subjected to any substantial impact of advanced Indian civilizations, and the art styles flourishing among some of the tribes differ in many basic features from the tribal art of central and southern India. The closest parallels to these styles are found among such southeast-Asian peoples as the hill tribes of the Philippine island of Luzon, the inhabitants of Nias, and to a somewhat lesser degree the inland people of Borneo. The greatest concentration of artistic talent seems to occur among some of the Nāga tribes in the highlands separating Assam from Burma. They are probably the only tribal group in India whose achievements in the plastic arts are at all comparable to those of certain Oceanic and African peoples; and measured by the abundance and quality of Nāga works, the level of artistic expression of other Assam hill tribes, particularly those in the hills north of the Brahmaputra (e.g., the Abor, Daffa, and Apa Tanis), must be considered very low. Indeed, some of these tribes, though considerably advanced in other respects, do not produce any works of sculpture or painting, and their artistic production is limited to the elaboration of weaving patterns and the manufacture of jewelry. The lack of any representative art cannot always be ascribed to the absence of talent, however; among the Apa Tanis, for example, young boys are extremely skillful in the modeling of clay animals to be used as toys, but this skill is not developed in adult life.

On the other hand, among the Nāga, whose economic level is comparable to that of the tribes of northern Assam, plastic arts are flourishing, and there are two distinct and highly developed styles: one naturalistic and exuberant, the other symbolic and controlled but also of great vigor.

The naturalistic style prevails mainly among a group of tribes comprising the Konyak, Phom, and Chang, who seem to represent the more archaic stratum in Nāga culture. The centers of social life among the Konyak Nāga are the great men's houses (*morung*), which serve as dormitories for the unmarried boys, as clubs, and as ritual centers. The center posts in the main hall are almost invariably richly carved, and some of them bear almost life-size human and animal figures (PL. 495). Another feature of many Konyak men's houses is a frieze running under the eaves, containing figures of men and women, warriors holding captured heads in their hands, tigers, gibbons, hornbills, and other animals. The favorite motifs for the central post are an elephant's head, usually flanked by two men, a tiger running down the post, and couples in erotic postures. Domestic animals are seldom depicted, and even the domestic bison (*mithan*), a favorite symbol of wealth among neighboring tribes, plays but a minor role in Konyak sculpture (PL. 495). That the carved figures in a men's house are not purely decorative but also have a symbolic significance can be deduced from the fact that certain *morung* are not entitled to carvings of tigers or human figures and have to content themselves with representations of lesser creatures. Most of the figures are stiff and angular, and little effort is made to refine and polish details once the crude outline of the figure has been hewn out of the hard wood of the post. However, there are some exceptions, and the carvings of couples on some central posts show a genuine feeling for movement and an ability to express it in a static medium. The carvings may or may not be painted, each men's house having a different tradition. The principal pigments are red, white, and black, and the painting sometimes extends also to large wooden screens separating the main hall of a men's house from the sleeping quarters. Such screens are decorated with drawings of the sun and moon and simple geometric patterns. The minor posts and rafters are fashioned in geometric shapes, a work which, although it calls for less skill and imagination, nevertheless requires great and sustained effort. The two types of decoration are not mutually exclusive but are found in the same building.

Each of these houses has, either in its central hall or in a separate shed, a great wooden xylophone or log drum. Most Konyak log drums are decorated with geometric carvings, but the Ao and Chang Nāga sometimes carve them to resemble living creatures, the "head" of the drum being a naturalistic representation of the head of a buffalo or other animal.

The carved figures in the Nāga men's houses represent neither deities nor totem animals, nor are they cult objects. Their purpose is nevertheless not purely decorative. Although the Nāga are not explicit regarding their ultimate significance, there can be little doubt that the representations of men and women in erotic postures are meant to have a beneficial influence on the fertility of the inmates of the men's house and that hornbills and elephants are considered auspicious animals. Where warriors are represented brandishing weapons and carrying head trophies, the significance of the carvings as magical or emotional stimuli to martial exploits can hardly be in doubt. But in addition, pride and esthetic pleasure in the decoration of the clubhouses and the joy of artistic creation are themselves powerful drives, and the Nāga often carve a human head or a small statuette simply as a pastime.

The only figures carved in the round which are made for strictly ritual purposes are funerary statuettes. Those of the Konyak Nāga are somewhat rigid, well-finished wooden figures which, dressed up in miniature replicas of a warrior's ceremonial dress, are placed in pairs beside the corpse platform of a man of note. The one figure represents the deceased and the other a companion who is to act as his servant on the journey to the land of the dead. Unlike the ancestor figures of some Indonesian tribes, these figures are not the object of any cult and are allowed to decay, together with the dead person's possessions, placed on the corpse platform. The Phom Nāga carve similar effigies of the dead which are believed to serve as habitations of the soul substance of the deceased. To facilitate its passing from the skull into the effigy, they place the skull for some time on top of the figure, which has two hornlike projections rising from the flat-topped head.

Parallel to the Nāga funerary effigies are the wooden figures which the Kalash of Chitral place on their burial places. These are naturalistic effigies, some of which are mounted on horses. The style, identical with that of the old Kafir effigies, resembles in its rigidity and the omission of anatomical details the style of Nāga carvings, but the similarity may be entirely fortuitous.

Better finished than any of the large Konyak sculptures are miniature human heads carved from hard wood, well rounded and polished, and worn on a necklace by successful headhunters. In the carving of these small tokens of martial exploits, particular attention is devoted to the modeling of the features, which are quite striking.

Although most Konyak carvings are naturalistic, there are in some villages carved house planks with highly conventionalized cattle and buffalo heads, lizards, and hornbills in low relief, which resemble certain features of the symbolic art of such tribes as the Angami Nāga. A series of such carvings, published by J. H. Hutton, shows clearly the development of a geometric pattern from the stylized carvings of cattle heads.

The symbolic style prevalent among the Angami and several other western Nāga tribes is based on an artistic idiom utilizing a limited number of conventional symbols, the arrangement and combination of which can be infinitely varied. Angami art is monumental, heavy, and rigid; there is no movement and little grace in it. But as an architectural motif the carvings that decorate the façades of the houses are very impressive, as are the carvings and paintings that decorate the village gates (PL. 496). The symbols most frequently used in both types of carvings are cattle heads, hornbill feathers, women's breasts, head trophies, and the sun and moon. A human figure may stand between the horns of a cattle head, but even such seminaturalistic combinations are rare, and the symbols are generally arranged in a geometric pattern.

An important feature of the monumental art of the Nāga as well as of certain Kuki and Chin tribes are great Y-shaped posts set up to commemorate feasts of merit (PL. 498). Some of these memorials are plain, forked posts, but others show the heads of cattle in high relief superimposed on the natural fork of the post. As the Y-post, similar to a menhir, commemorates the sacrifice of cattle, the association between this and cattle horns is obvious, but a more complicated symbolism is involved where the ends of the fork are carved in the shape of human heads. Among the Eastern Angami it is said that

these heads represent the donor of the feast and his wife in the same way that pairs of menhirs set up in the course of feasts of merit represent the couple who gave the feast. Similarly the carved horns on the roofs of wealthy Angami Nāga are symbolic of the feasts of merit given by the owner of the house. The art of these tribes may, therefore, have a commemorative, magic-symbolic, or purely decorative function.

The esthetic sensibilities of the Angami and similar tribes find greater scope in the arts of weaving and the making of elaborate ornaments. Patterns and color combinations of Nāga textiles vary from village to village, as do the shapes of ornaments worn by dancers on festive occasions. The wealth and complexity of such ceremonial costumes and headdresses has no parallel anywhere else in India.

Characteristic of the art of the hill tribes of Assam is its preoccupation with the visible world. Unlike the Saora painter, who depicts in his wall drawings gods and spirits as well as people and animals, the Nāga or Kuki carver never attempts to portray the supernatural beings of his cult. Among the tribes, too, art is often reduced to conventional symbols, but every symbol relates to a visible entity, and there is no artistic representation of what exists only in man's belief and imagination. Even the so-called "soul figures," or funerary effigies, are intended only as substitutes for the living body, to provide the soul of the deceased with a temporary abode. They are not permanent symbols of departed kinsmen.

It is only among the tribes within the Buddhist sphere that we find both pictures of deities and ritual masks. For example, the men of one of the Monba tribes of the Balipara Frontier Tract, locally known as Sengithongji, dress up in realistic wooden masks of considerable artistic refinement, and the image of a deity riding on a sacred bull plays a central role in their ritual dances. But the origin of these mask dances lies clearly in the domain of Lamaistic Buddhism.

Tribal art and popular art. Most Indian tribal art is distinct from the folk art of the Hindu peasantry, and in the absence of a common cultural denominator no great importance should be attached to superficial similarities of form and style. Nevertheless, certain parallels between tribal and rural art cannot be completely ignored. Whether such parallels are due to development from the same roots or whether they should be attributed to the spread of ideas and techniques across ethnic and cultural frontiers cannot be determined in every case. The wooden mortuary monuments known as *brisakath*, for instance, which in many parts of Bengal and Sylhet are put up at road junctions in commemoration of the dead, are clearly reminiscent of the wooden memorial pillars, described above, of certain central Indian tribes. Similar eschatological concepts underlie the erection of such monuments, but the style of carving differs, and some of the Bengal pillars show unmistakably the influence of classical Hindu art.

Another parallel between tribal and folk art is provided by the clay figures of animals placed as votary gifts in the shrines of local deities. But whereas aborigines use such figures almost exclusively for ritual purposes, Hindu peasants see in them both toys and potential offerings to village gods and goddesses.

In the sphere of applied art there is in some areas a certain overlapping between tribal styles of decoration and those used by the craftsmen of the local Hindu villages. Silversmiths, for instance, make jewelry both for tribal women and for customers of other castes, and although they satisfy the taste of the former to a great extent and produce ornaments that are "tribal" in shape and feeling, they nevertheless employ similar decorative designs in making ornaments for Hindu women. Much of the applied art found today among the Indian aborigines is therefore not specifically "tribal" but coincides with the main tendencies of the regional folk art.

At the mid-20th century, however, both tribal and folk art were steadily declining. The isolation of many aboriginal tribes has greatly diminished, and contact with advanced populations has brought about many changes in the traditional way of life. Machine-made goods are increasingly replacing the products of the local craftsmen, and such institutions as men's houses and

youth dormitories, which used to provide the tribal wood carver with wide scope for the practice of his art, are gradually losing their importance in tribal life.

Outside India and even in the centers of Indian intellectual life, very little is known of the art of the aboriginal tribes, and substantial collections of Indian primitive art are lacking in the museums. It is only because of the research and photographic records of anthropologists that the major tribal styles can be discerned in broad outline; but the available data are far from complete, and further ethnographic research will be necessary before it is possible to attempt a comprehensive evaluation of Indian tribal art.

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INDOCHINA. General considerations. Two great cultures have left their imprint on Indochina and have given rise to a "historical" culture as opposed to a culture whose evolution cannot be traced. However, nations influenced by either India or China, or by both, endowed the arts born under these influences with a character of their own. This native character was due, at least in part, to tribes that constitute an ethnic minority today.

With the exception of the Man, or Yao, and the Meo, or Miao, who did not begin their penetration into Indochina until the 17th century, it is difficult to determine precisely which ethnic groups, if any, are indigenous, which arrived in the territory as a result of migrations previous to the arrival of those who later became dominant groups, and which arrived contemporaneously with these groups. Furthermore, the minority groups belong to the same races as the majority groups. The Tai, Man, Mnong, and others are further subdivided into groups that are frequently distinguishable only by certain details of costume. A chart showing the distribution of the ethnic groups, however simplified, would indicate the complexity of this distribution, compounded as it is by the crossing of ethnic barriers. There are few groups that are not at the present time more or less mixed, and these, as they become assimilated into the dominant groups, modify their own art forms, adopting the objects and techniques of the dominant groups. Among the peoples who have not evolved beyond the tribal stage, however, artistic expression remains closely bound to religious and social requirements.

The implements in use among all the proto-Indochinese are indeed rudimentary; but the fact that the Khmer (see *KHMER*) and the Cham (see *CHAM, SCHOOL OF*) did not have the best of tools when they constructed Angkor and Po Nagar proves that the quality of the tool alone does not determine the value of the work of art. The present-day tribes, however, habitually employ nondurable materials; consequently the evolution of their art cannot be traced. Although we are ignorant of the intermediate stages, however, we meet with striking analogies throughout Indochina and Indonesia (see *INDONESIA*) in certain ornamental motifs and in the persistence of their symbolic meaning. Sir Richard Winstedt, following the conclusions of Heine-Geldern and Stutterheim, traces these motifs back to the Đông-Son style, which may indeed be their common source. There is no doubt about the stylistic relationship between some of the motifs used to decorate the bronze drums of the Đông-Son period and those found on textiles, on jewelry especially, on wooden and bamboo objects, and in tattoos.

Painting and adornment of the body. Painting and adornment of the body serve primarily the magical purpose of giving

protection against evil spirits. The types of face painting that have become traditionally established and have some artistic value have become increasingly rare in Indochina, and those noted by Skeat among the Semang and Sakai, by Izikowitz among the Lamet, and by Bernatzik among the Semang of Thailand are extremely simple. In tattoo, on the other hand,



Laotian tattoos, representational motifs.

of which the most notable examples are found in Laos, technical skill and artistic taste are indispensable (FIG. 851). The inhabitants of this region must naturally be classified among the peoples of historical cultures; and mention must be made of those of their art forms which are analogous to tribal art.

Among the people of Laos (see LAOS; LAOS, SCHOOL OF) the use of tattoo appears to be fairly recent. In fact, F. Garnier stated in 1885 that the use of tattoo was beginning to spread and to take on the exaggerated proportions that had caused the people of northern Laos to be called the "black-stomached" Laotians. Luangprabang, he continued, is the boundary that separates this people from the "white-stomached," or southern, Laotians, among whom the practice of tattoo is less common. Drawings illustrating Garnier's work demonstrate that the practice had probably existed for a long time among some Kha groups, whose style was less realistic than that which prevailed among the Laotians. Among the mountaineers of Annam, tattooing is found only in the Kha Tu group, where the highly stylized motifs seem to preserve their full symbolic meaning. Of these motifs the most common are the sun, represented by a circle from which segments or triangles break off, often in odd numbers, and the "dancing woman," which might be called the "winged woman" and perhaps related to the "bird soul" (FIG. 852). The use of tattoo is also found in Burma (see BURMA; BURMESE ART) among some mountain peoples, including the Palaung, and among the Red Karen, who are in the habit of tattooing a rising sun on their backs. The motif of the sun represented as a series of lines arranged in a widely spread bundle is less frequent than that of the sun in a round form or the star motif; it is found, however, on some Đông-Son drums and also, as we shall see, on many pieces of jewelry of the Tai and especially the Man tribes.

Other body ornaments, which have remained in a more elementary stage, are composed of shells and seeds strung like glass beads and often mixed with beads. Data concerning the Oe Eo excavations leave it uncertain whether ceramic beads were at one time manufactured in Indochina; if they were, however, the technique has been forgotten among the peoples of Indochina. Another form of ornament is made of tapa, which in Indochina lacks the suppleness and regularity of that from Oceania. Pieces of beaten bark are made into a short skirt, or *langouti*; but only the smallest pieces are decorated, with large dots of ocher or black set at varying intervals. The Sakai of Malaya and the Pars of Cambodia appear to have been the last to make and use such objects.

Basketwork and pottery. Although basketwork in Indochina does not attain the refinement that characterizes the baskets of the Philippines or Japan, it shows a certain concern for decorative effects. The diversity of the weaving itself produces various geometric motifs, as exemplified in the partitions of the huts, in mats, and in various types of baskets (PL. 498). Other patterns occur when parts of cradles and other objects in cur-

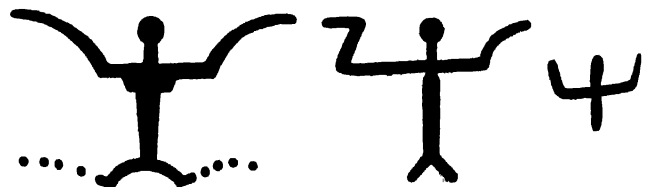
rent use are executed in openwork. The contrast between light and dark tones brings out the design, often with a pleasing effect; and, when the pieces of wicker or palm fronds are painted with a combination of black and a whole range of reds and browns, still more varied effects are obtained.

Pottery has never attained a high level even among the most advanced of these peoples (PL. 500), probably because many Indochinese peoples have, from quite remote times, traded valuable forest products for Chinese porcelains, silks, and brocades.

The Pou Eun potters use molds and bake their pots without a kiln, simply covering them with straw and earth; however, the use of the potter's wheel and kiln baking are techniques found in most of the groups. Pottery production is usually a woman's industry, and the Pou Eun, among whom it is practiced only by men, must be considered an exception. Decoration, when it is used, is fairly simple and is incised with a bamboo stick, a metal blade, or, more rarely, an awl. Almost all the motifs are also incised on metal or wood.

Bamboo and woodwork. Some of the most original products of tribal art are objects made of bamboo. In Indochina, blowguns and quivers, boxes for lime, betel nuts, and tobacco, and a great variety of other objects are made of bamboo; it is used so extensively, in fact, that one can almost call this a "bamboo culture." Some of these objects are decorated by means of inlay, by covering part of the object with woven fibers, by a combination of these methods, or by poker work. The Muong make square, triangular, or lozenge-shaped incrustations of a single piece of mother-of-pearl, ivory, or bone surrounded by a black band either burned into the bamboo or inlaid with black wood. The Lisu of Burma make inlays of small pieces of bone or ivory and seeds that are crushed or split to obtain a color contrasting with the white. Poker work introduces a great variety of decorative motifs in the bamboo work of the Semang and especially that of the Sakai of Malacca, among whom these motifs retained the magic power connected with their symbolic meaning well past the first quarter of the 20th century. According to G. V. Stevens, the motif most frequently associated with frets, hatching, combinations of squares or triangles, or a simple succession of dots derives from the stylization of the so-called "Ixora" flower. Many of the motifs used in the embellishment of combs are also found on quivers and blowguns; the latter, however, are less frequently and less richly ornamented than other objects.

Woodworking takes us still more deeply into tribal art. Wood is the primary material of architecture and sculpture, two arts that, in their continuity, fully express the character and beliefs of these tribal societies. The houses of the Indochinese mountaineers are of interlaced wood and bamboo and are almost always constructed on pilework, the shape of the roof and especially the exterior decoration differing from one ethnic group to another. Among the Mon-Khmer and the Indonesoid tribes, the poles of the house are richly decorated, especially the central pole, which is sometimes the only pole that is decorated, since from a religious point of view the place where this pole rises is the most important in the dwelling. Among the tribes of the Mongoloid group, on the other hand,



Tattoos from Annam, the "dancing-woman" motif.

the most important part of the house is that in which the ancestral altar is set up. In the majority of Muong villages, ancestral altars are found only in the house of the chieftain; here, unless the owner is poor, the altar is in pure Vietnamese style.

Where sacrificial poles are erected near the habitations, as among the proto-Indochinese of the Mon-Khmer group, the decoration of these is similar to that on the poles in the dwellings. Both are signs of prestige.

Sometimes zoomorphic figures are used as decorative motifs on the roof. Le Pichon notes a monkey motif among the Kha Tu (FIG. 854), but birds occur more frequently. The Muong call the part of the frame where the fibers are united the "crow," but it is not easy to recognize a crow in the schematic silhouette of the round head and sharp beak. Among the proto-Indochinese of Kontum and Darlac, one can usually recognize, despite stylization, the characteristic beak of the *calao* (hornbill) and the head of the toucan, which decorate the houses, particularly the sacrificial poles. Bird forms also decorate the lamps suspended within Muong and Tai dwellings (PL. 497).

Free-standing sculpture is represented by masks and funerary statuettes. The masks, carved in soft woods, are used in agricultural rites among the Sedang (PL. 499) and in funerary dances among the Red Tai; in both cases they have primarily magical rather than artistic significance. Masks for agricultural rites sometimes carry a sexual symbol believed to assure the fertility of the fields. Sometimes, however, it suffices that one mask be worn by a man and another by a woman or that one represent a male face and the other a female, since the association of the sexes has the requisite symbolic significance. Funerary statuettes are placed near the tombs, and nothing is done to assure their preservation. Since these too are carved from soft woods, they decay rapidly. Some of the funerary statuettes of Kontum are simple straw images armed with a bow. These serve to defend the dead person, his family, and his village against evil spirits. The funerary statuettes are not images of the dead man and consequently are not always anthropomorphic; often they are animal forms, usually birds (PL. 497). The Tai claim that one of the souls has the form of a bird; the soul is multiple or at least multiform among the proto-Indochinese, but the statuettes left near the tomb are not, as we have said, images of the dead man, nor are the bird statuettes representations of his soul. The finest examples of such statuettes are found around Darlac and Kontum and in the southern portion of the Boloven Plateau.

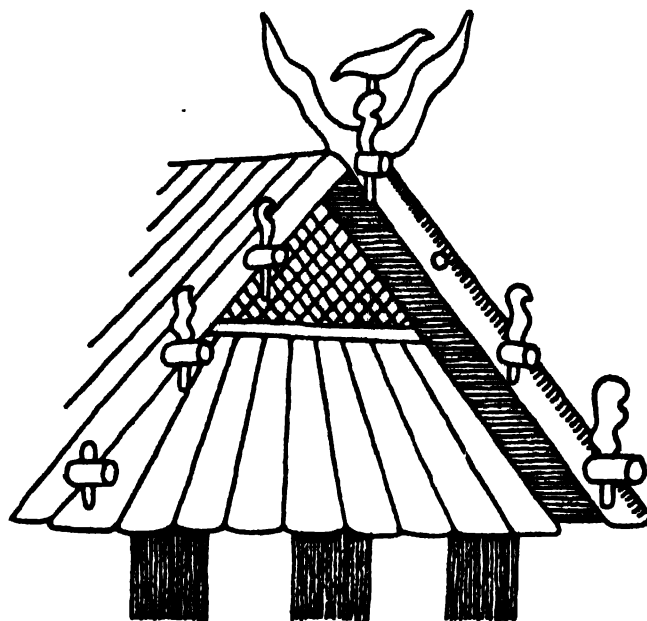
Textiles. Although weaving does not represent a true art form among the Indochinese tribal groups as it does in Indonesia, the textiles of these groups are not without value, and those of Cambodia and Laos can compete with Indonesian products. Some Tai tribes, particularly the Tai Neua, have learned the manufacture of *ikat* as a result of contact with the Laotians (PL. 498). All the groups, even the Muong, who are mediocre artists, are able to weave a regular design; the women's skirts in almost all the groups terminate in a woven design. Among the Muong and the Kha Lamet this woven strip, called the "head" of the skirt, constitutes the upper edge and falls over the belt, which secures it. Among the Tai, on the other hand, and generally among other groups, this band is found at the bottom and consequently stands out more clearly (PL. 498). These designs are not always woven; among the greater part of the Man tribe they are embroidered, usually to imitate weaving. The stem stitch, the cross stitch, and the satin stitch all occur in the composition of floral, geometric, zoomorphic, and, at least among the Man Cóc, highly stylized anthropomorphic motifs. Among the Man Tiên, geometric designs predominate, together with the practice of sewing coins (*sapek*) on jackets, hats, and aprons; indeed, the name Man Tiên, which means "man of *sapek*," stems from this practice.

The Meo seem to have a preference for hexagonal motifs. These usually combine embroidery with an appliqué of fabrics of various colors. Sometimes the applied cloth is decorated in turn with secondary appliques. The Rade employ a similar method, fashioning designs from galloons sewed to a small piece of cloth; other fabrics are embroidered. The small appliqué obtained in this manner is then sewed onto a larger piece.

The abundance of indigo in the Indochinese flora accounts for the predominantly blue background of the fabrics; black backgrounds, which occur, for example, among the Black Tai

of the Son La region, result from more concentrated indigo baths and prolonged and repeated immersions. Other colors in use are white and red; in addition, lighter blues and yellows are sometimes used for decorative motifs, which are appliquéd, embroidered, and woven.

Metalwork. Ceremonial costumes are not complete without jewelry, and some items of clothing for daily use are worn



Ornamental motifs from a Kha house, Laos.

with metal fastenings or ornaments. Among the Black Tai for example, the women's bodices are closed in front by a row of small round buttons of engraved silver. Among the Meo the caps of newborn children and some of the turbans worn by men are ornamented with disks and small cones of silver decorated with some of the motifs used on bracelets and belt buckles. Earrings are simple loops; necklaces consist of circles terminating in two *naga*, or serpents, which are placed in a back-to-back position by the curve of the metal. This motif is common to the Tho, Tai, Muong, Meo, and Man, as well as to the Vietnamese, Laotians, and Cambodians.

The Man and Meo have their own goldsmiths, but the Red Tai and the Muong obtain their ornaments from Vietnamese artisans, whose designs are more complex and demanding than those of the Man and Meo artisans but lack the originality characteristic of tribal art. In order to produce stylized representations of flowers, butterflies, and the sun, the Man and Meo engrave parallel bands or dots arranged in circles, semicircles, or quadrants, which intersect or face one another (PL. 498). The sun is represented as either round, as in the Kha Tu tattoos mentioned above, or radial, as it appears, for example, among the Red Karen.

The tribes of the Mon-Khmer and Indonesian groups use precious metals for their jewelry either very little or not at all, and their ornaments are generally made of fancy glass or imitation-pearl beads obtained from foreign merchants. The ornaments of the men are often of greater value than those of the women, though they are just as simple in style. Among the Mnong, who are elephant hunters, the men wear a piece of ivory in the lobe of the ear, whereas the women content themselves with small rings of white wood. The men's combs are appreciably different in form from those of the Sakai; most of them are made of wood, but some are of bamboo; many are ornamented or covered with tin. The women's hair pins are of various forms, and some are slightly decorated.

Among the Mnong and other proto-Indochinese tribes, there are smiths who produce only everyday implements and iron

cutting tools. Among the Man, on the other hand, there are, in addition to ironsmiths, goldsmiths and artisans specializing in making weapons. The guns used by the Muong, Tai, and Tho are produced especially for them by the Man. The butt of the gun is often inlaid with bone, ivory, or silver, but these inlays do not represent a well-defined decorative tradition.

The principal decorative motifs. In the absence of a comprehensive study, it is almost impossible to classify and interpret the motifs in use in the tribal arts of Indochina, since in order to do so it would be necessary to catalogue these motifs as the Djakarta Museum has catalogued those of Indonesian arts.

The sun and all the astral motifs connected with it are remnants of a solar cult that is today overshadowed by or absorbed into other ritual forms but some of whose elements survive among the Semang. A floral motif such as the "Ixora" blossom on the combs of the Semang and Sakai may have been associated with this cult. Some of the animal representations probably refer to dietary taboos, relics of the ancient totemistic beliefs of some of the clans. The motif of the bird, on the other hand, is a more complex one. It sometimes represents the soul, as in the funerary figures of the Tai, but this is not the only possible interpretation. When it appears, among the Tai and Muong, as decoration on the little knives used throughout southeast Asia for the ritual cutting of the first stalks of rice, its symbolism has some relationship to the soul of the paddy. This symbolic meaning does not, however, explain why the bird motif appears, singly or in pairs or groups, on Muong and Tai lamps (PL. 497). The birds selected by the artisans very frequently belong to types that constitute a classic motif in Chinese art (the heron, peacock, phoenix, and others), in which each has its own mythology. The presence of the hornbill recalls the reports by Portuguese travelers that the plumage and beak of this bird were included in tributes sent to the emperor of China, and it is tempting to see them as a symbol of prestige and a sign of alliance. It is necessary to remember also that the hornbill's plumage is used in certain magical rites; and a similar explanation can be given for representations of the peacock, whose feathers are one of the attributes of the celebrant in almost all the ceremonies from the Muong country to Assam. The *naga*, or serpent, is a motif connected with myths of water, grass, and marshes; hence it is in a certain sense the antithesis of the bird, which, by contrast, represents myths of the air, trees, and clouds. Finally, the image of the firefly, though less frequently represented in Indochina than in the small islands of the Sonda, is not entirely absent from the repertoire of decorative animals, even among the Kha Lamet on both sides of the Burmese frontier. This too, like the representation of the hornbill, attests to the affinity between the peoples of Indochina and Indonesia.

Occasionally there appears in an ethnic group that is not very advanced work that seems to belong to the classic art of a neighboring people. Some loom battens, for example, and some Kuoy bobbins are decorated with motifs that can be connected with Khmer art; it is impossible to say whether such objects were fashioned by Cambodian artisans who settled in Kuoy territory or whether an unusually skillful Kuoy artisan copied a Cambodian example. Similar examples are found among some Tai tribes that have mingled more than others with the Laotians and among some mountain groups that have closer contacts with the Burmese; but these examples are rare. Still more significant, if not more frequent, is the reverse phenomenon, the survival of the characteristics of tribal art in countries with historical cultures. The most frequent examples are seen in the deer's head and the masks used in the Leng Trot dances in Cambodia.

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Illustrations: PLS. 401-500; 5 figs. in text.

ASIA, WEST: ANCIENT ART. Regarded from the point of view of the arts, the ancient cultures of West Asia are those which held sway from the end of the 4th millennium B.C. to the middle of the 1st. The area involved can be divided into three principal parts: Mesopotamia, Anatolia (including Armenia), and Syria (including Palestine). Among these Mesopotamia is foremost, since conditions there, more than elsewhere, afforded the artist the necessary means and patronage. There wealth and education increased the demand for and encouraged progress in the arts; and while foreign trade brought new materials and new ideas, foreign conquest imposed the Mesopotamian civilization upon alien peoples at the cost of their originality. Thus Mesopotamia was, for the greater part of the period dealt with here, unmistakably the principal center of West Asia. The peripheral countries, Anatolia and Syria, divided generally into small states that were alternately flushed with success or depressed into subjection as a result of their constant wars, often in their prosperous moments launched out upon some artistic venture; but in most cases they only feverishly aped the established fashions of the greater power, and nearly always the effort petered out with their political collapse. As a result, the art history of these peoples tends to be episodic and disconnected; certain aspects of it demand notice, but on the whole it acquires meaning rather by reference to the continuous and logical development of art in Mesopotamia. For these reasons the greater part of this article will be devoted to the art of Mesopotamia, especially to the period of its greatest originality. For the earliest phases, see also ASIATIC PROTOHISTORY; MEDITERRANEAN PROTOHISTORY. For an analysis of specific centers and traditions see HITTITE ART; MESOPOTAMIA, SYRO-PALESTINIAN ART; URARTU. For derivative styles and marginal contacts and influences, see ARABIAN PRE-ISLAMIC ART, ARCHAIC ART; ASIA, CENTRAL; ASIA MINOR, WESTERN; PRE-GREEK CULTURES; CYPRIOTE ART, ANCIENT; CRETAN-MYCENAEAN ART; EGYPTIAN ART; GEOMETRIC STYLE; INDUS VALLEY ART; IRANIAN PRE-SASSANIAN ART CULTURES; ORIENTALIZING STYLE; PHOENICIAN-PUNIC ART; STEPPES CULTURES.

SUMMARY. The origin and evolution of art in Mesopotamia (col. 856): *The Uruk and Jamdat Nasr period: a. Architecture, b. Sculpture; c. Glyptic art; The early dynastic period: a. Sculpture, b. Glyptic art; c. Painting and drawing; The Sargomid period; The neo-Sumerian period of Issin, Larsa, and Babylonia: a. Architecture, b. Sculpture; c. Glyptic art; d. Painting; The Assyrian period The neo-Babylonian period (col. 872). Anatolia and Armenia (col. 872) The beginnings; The Hittite age; Urartu. Syria (col. 875): The beginnings in North Syria: a. Architecture; b. Sculpture; Syro-Phoenician art; Syro-Hittite art: a. Architecture; b. Sculpture. Conclusion (col. 881).*

THE ORIGIN AND EVOLUTION OF ART IN MESOPOTAMIA. *The Uruk and Jamdat Nasr period.* The first people to settle in the drying marshlands of the Euphrates delta were immigrants from southwestern Persia; thus Sumer began as an offshoot of Elam (q. v.). Except for the very earliest artistic manifestations, consisting of pottery and some statues representing gods (see ASIATIC PROTOHISTORY; MEDITERRANEAN PROTOHISTORY), it was only in the next age, the Uruk period, beginning in the 4th millennium B.C., that work of real artistic merit was produced. A new racial element had entered the country, coming probably from the north, and had fertilized with new ideas the aboriginal culture. Metal came into regular use, and greater urbanization created new demands and supplied both the wealth and the skilled technique for their fulfillment. In this and in the Jamdat Nasr period, which followed it and lasted until 2800 B.C. and in which new immigrants again entered the delta, Sumerian art matured; much that had been contributed in elementary form by the 'Ubaid people was taken over and developed. In the field of architecture, especially, the simple early building methods using reeds and mud had suggested most if not all the basic forms of construction, but what was now evolved was really a new art.

a. Architecture. The reed hut of al-'Ubaid times had given rise to the buttressed wall, the vault, the arch, and the dome;

and the palms of the delta inevitably suggested the column. All these had to be translated into brickwork, the only good material available in a land lacking stone. Until the fall of Babylon, the façades of sacred buildings were distinguished by the square or half-column buttresses which are the direct descendants of the mud-coated fascine uprights of the reed hut. The vault, also, both the corbel and the ring-barrel type, was continuously employed for underground tombs, and although there is less evidence for buildings above ground, it can be shown that until the 14th century B.C. many temples were roofed entirely with vaults and domes. Similarly, the arch is found in tombs of the 27th century B.C., in private houses of the 18th,

amongst the ruins prove that such decoration was characteristic of the Uruk period.

The labor required for the cone mosaic was immense, too great for the fashion to last very long. It continued into the next (Jamdat Nasr) period, but there was a tendency to replace it by tempera painting in the same color range, either on plain mud or on a whitewashed ground. Where cones were still used, however, a certain economy was achieved and a fresh effect obtained by attaching to the wall face flat, silhouetted terra-cotta reliefs of animals or human beings and even architectural details such as fluted columns, and using the cones only to fill the interstices between the figures. It was a compromise which had



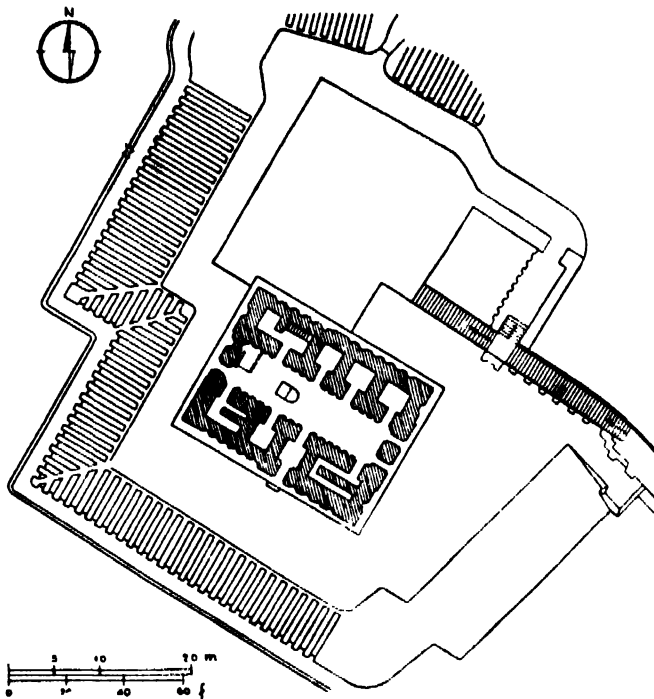
Western Asia: main centers and areas of ancient civilizations.

and in an extant 14th-century temple. Almost from the beginning, therefore, the architect could call into service any constructional form and, secure of his means, could consider appearance as well as function. An astonishing example of this is afforded by the great palace, or temple, of the Uruk period at Erech. Not content with mere whitewash or mud plaster on the face of his walls, mud-brick columns almost 10 ft. in diameter, and half-column buttresses, the designer covered the entire surface with a mosaic made of small terra-cotta cones, their ends colored buff, red, and black, driven side by side into the thick plaster in patterns of zigzags, lozenges, and triangles worked in black and red on a buff ground. This exuberant polychromy, which transformed an otherwise heavy and uninteresting building into something as fantastically brilliant as a medieval Persian mosque, could not fail to commend itself to other architects; only at Erech is an example of it preserved intact, but on many other sites the same colored cones scattered

far-reaching results. The introduction of animal figures naturally led to their arrangement in horizontal rows, and their importance was accentuated by separating the rows from one another; this again meant less cone work. Separate bands became architectural friezes, and it was then a matter of good taste to harmonize these with the lines of the building. Accordingly, in the temple at al-'Ubaid near Ur, built in about 2600 B.C. by King A-anni-padda, the whitewashed façade is crossed by three friezes (two of them in a mosaic of flat pieces, not of cones), and the width of the friezes and the degree of detail in the figures composing them is carefully proportioned to their height in the wall face and so to their distance from the eye. The over-all decoration of the Erech mosaic temple, magnificent as it is, does not complement the structure; its arbitrary luxuriance disguises rather than emphasizes the lines of construction. A-anni-padda's temple shows a more mature understanding. When, toward the close of the 3d millennium, the

Assyrians revived the polychrome decoration of walls with the use of colored and glazed bricks, the tradition of the frieze held good and the rules of architectural proportion were observed.

In this period the temple was distinguished from the palace by two constant, characteristic features: the niche on one side, indicating the place where the image of the god was placed, and the table that served as an altar in front of this niche. In addition, some of the sanctuaries were raised on a terraced base; to this type belongs the most celebrated temple of the period, the "White Temple" at Erech (FIG. 859).



Erech, the "White Temple," ground plan (from Frankfort, *The Art and Architecture of the Ancient Orient*).

b. Sculpture. "All Mesopotamian statuary was intended for temples; the human form was translated into stone for the express purpose of confronting the god" (H. Frankfort, *The Art and Architecture of the Ancient Orient*). Thus the artist's sphere was strictly limited; he was not at liberty to give free rein to his imagination and to choose his subjects. His patrons, who belonged to the narrow circle of the wealthy aristocracy, did not commission a statue as a work of art having an independent value but as a utilitarian object subserving a purpose that had nothing to do with esthetics; any beauty it might possess was valued only in so far as it contributed to the statue's usefulness. The artist could not appeal to or influence public taste, because his sculpture, hidden away in the recesses of the sanctuary, was never seen by the public; it was seen only by a few priests, who would insist upon the observance of religious tradition. The artist was bound to accept these limitations; if, in spite of them, or even profiting by them, he was yet able to produce something that commands our admiration today, then he must be given full credit for his artistry.

The civilization of Mesopotamia was centered in the south — in the delta country between modern Baghdad and the head of the Persian Gulf. It is a country in which stone is entirely lacking. Sumerian and Babylonian sculptors had to import the materials for their craft — steatite, trachite, and diorite. Stone, therefore, was expensive and had to be used to the best advantage. The favorite material was diorite, a hard, fine-grained stone which takes a fine polish; this was used for nearly all the major works that have come down to us. But the diorite was not mined; it was imported in the form of natural boulders, and the size and shape of these profoundly influenced Sumerian sculpture. The earliest steles that we possess are carved upon

the faces of boulders that otherwise preserve their natural form. Rarely would a block be long enough to make a life-size standing figure; much more often it would be suitable for one in a seated or squatting position. It is curious to observe how frequently a seated Sumerian statue suggests the probable outline of the original boulder, and again how, in a standing figure, the head tends to be disproportionately big for the body, because the artist, mainly interested in the face, does justice to that at the expense of the body. If the head of one of the splendid Gudea statues measures one-fifth of the total height, the reason is simply the inadequacy of the stone block.

Because stone was rare, the sculptor was driven to the use of other materials. Clay was abundant, and for work of the cheaper grades terra cotta was the normal medium, but it was the material of the craftsman rather than of the artist, and very few of the remaining objects of terra cotta are of high artistic quality. From about 3000 B.C. onward statues and reliefs were freely made of copper or bronze and even of gold, and in such works one might reasonably expect to find not only the technique but also the inspiration of the masters. A few such have been preserved and are of high quality, but because the metal could always be melted down and reused, few survived. In contrast with Egypt, where the history of art is documented by an almost embarrassing wealth of stone reliefs and sculptures in the round, Mesopotamia, Elam, Anatolia, and Syria present us with but a few score examples.

A unique object, which probably belongs to the late Uruk, perhaps even the Jamdat Nasr, period and which incidentally illustrates some of the technical points mentioned above, is a woman's head in marble, almost life size, found at Erech. Actually it is only a face, the back of the head being flat, and it was made separately from the body, which most have been in some other material, perhaps wood. This acrolithic technique results directly from the impossibility of getting a block of stone big enough for a full-scale statue. As with later figures, the eyes were inlaid, probably with shell and lapis lazuli or obsidian and the brows with black shale or steatite. The hair was made separately, perhaps of copper or gold, and affixed by means of copper rivets. The astonishingly sensitive modeling of the face, the soft yet firm lips, the aloof dignity of the expression, make of this earliest Sumerian statue a thing of exalted beauty without parallel in the ancient world of the Middle East.

Only two other pieces of sculpture can be assigned to the Jamdat Nasr period. One, a small alabaster figure of a demon with a woman's body and the head of a lioness is, in its way, immensely powerful; combining realism with a schematic convention that removes it altogether from the plane of humanity, it successfully embodies the idea of devilish cruelty and god-like might. The other, a little statuette of a woman standing in the attitude of prayer, is of interest only because it betrays none of the conventions of later art but by its artless naturalism contrasts with the stylized figures of the early dynastic age.

Turning to relief sculpture, we must assign to the Uruk period the great gypsum vase, about 40 in. high, found at Erech, which is a real masterpiece of stone carving in relief. It is indeed disconcerting to find, at the end of the 4th millennium B.C., an art whose development cannot be traced but which presents itself already confident and mature. Round the funnel-shaped body of the vase run three bands of relief whose subjects, disparate though they may seem, all form part of one idea, the worship of the Earth Mother. In the lowest row rams and ewes, date palms, and stalks of barley stand for earth's fertility, which is her gift; above this are men bringing offerings, naked, as befits man in the divine presence. In the topmost row Inanna (Ishtar) herself stands before her shrine to receive the gift of fruit which a naked priest has taken presumably from the king (part of this figure is lost). Two human figures standing on a stepped platform supported by a bull may represent some cult object, and in the field one sees other gifts, including vases in the form of a lion and a bull. The artist was obliged by the requirements of ritual to overcrowd his scene, but in the principal figures he achieves a dignity and delicacy that are truly admirable. His sense of decorative composition is equally well demonstrated in the relief carved on

a limestone trough, showing sheep and lambs about a reed hyre. A few animal figures made for attachment to some background, recumbent beasts with their heads turned outward, prove that the craftsman was equally adept in low relief. Sometimes, indeed, his technique outran his taste, as when he plastered animal forms against a vessel in a way that disguised or distorted its shape; also, in the succeeding Jamdat Nasr period, delicate surface modeling tends to give way to incised lines that follow a schematic convention with small regard for nature. But the best Jamdat Nasr work is still very fine; a dark steatite bowl decorated with a row of oxen with their heads turned outward — the best surviving example of a very popular motif — and a figure of a wild boar, both from Ur, amply prove this. In the bowl, the striking contrasts of light and shade obtained by the deep relief and, in the figure of the boar, the sensitive treatment of the surface and the elimination of all that is not essential to the character of the particular animal bespeak the true artist. It is not surprising that many of the decorated stone vases that survive fall far below this high level of art, for the period was creative and robust, and as a result of the availability of a variety of materials and the new-found skill in carving stone, no experiment seemed excessive. Stones of various colors were fitted together to make a single vase, and the carving was embellished with inlays of shell, red jasper, or mother-of-pearl, which were too often used to excuse the coarsening of the carving; or the whole background of the relief might be cut away to leave the figures silhouetted against the light. Such extravagance, symptomatic of decadence, occurred late in the period the best work in stone carving proper had been done, and those who could not surpass or rival it turned to anything that was new and hitherto untried.

c Glyptic art. The same tendencies become evident in cylinder seals. The gem cutter was no copyist making miniature reproductions of great works of art; on the contrary, he was an independent artist whose designs seem to have served as models for the large-scale compositions of painters or sculptors, and his work can fairly be taken as illustrating the current fashions in art. The early cylinders are pictorial, some of them presenting a narrative scene resembling in character and treatment the top register of the Erech stone vase. The impressions from these seals, consisting of well-spaced figures cut in low relief, are very pleasing, but because the rolling-out process tends either to give only part of the scene, if the space for the impression is limited, or, if it is excessive, to duplicate parts of the picture, narrative themes were ill adapted to seal cutting. And consequently the artist set himself to achieve an inner harmony by means of a limited and symmetrical design which would be satisfactory even when incompletely rendered and would not suffer by repetition. Just as the effect of recumbent or walking cattle carved around a steatite bowl profits by the continuity of the circle, so rows of animals, or connected groups, could be repeated in an unbroken frieze; picture here gives place to pattern. It was probably because of the growing demand resulting from commercial prosperity that the quality of the seals degenerated toward the end of the Jamdat Nasr period. Deep drilling and careless cutting gave a flashy effect; figure subjects were lost in linear patterns and were either ousted altogether or became scarcely recognizable in the intricacies of the so-called "brocade" seals which appeared at the beginning of the next period.

The early dynastic period. In this period, between about 2800 and 2350 B.C., the architectural tradition continued without any great change. Flat bricks, convex on one side, were introduced; and temple plans were extended in a regular way and included a courtyard of additional rooms completing the sanctuary (an example is the Temple of Sin at Khafaje). But this period is more particularly marked by sculpture in stone and metal, by decorative works in copper, silver, and gold, by the graphic arts of shell engraving and wall painting — in fact, by all that is generally understood as Sumerian art. For the preceding periods, it has been necessary to base conclusions on relatively few and isolated objects, chiefly stone vases,

excavated from the deeper levels of ancient sites. For the early dynastic period, however, there is a wealth of material; consequently judgment is apt to be too facile, and critical opinion is strongly at variance.

a. Sculpture. A group of no less than a dozen statues found together in a cache beneath the floor of a temple at Tell Asmar was the first of a series of discoveries, both on this site and at Khafaje, of statues of various dates and of successive stages of development. Isolated finds from other sites further illustrate the sequence, and from Mari on the middle Euphrates, the very outskirts of Sumer, come figures that mark the transition from this to a new school of sculpture (PL. 502).

The Tell Asmar group (PL. 501) had been dedicated in the temple of one of the smaller Sumerian towns and is only too clearly of provincial workmanship. At Khafaje, also, the statues were locally made, some of them coming from a sculptor's workshop discovered there. They bear all the marks of the enthusiasm and inexperience of the provincial craftsman: despite the fragile quality of the "Mosul marble" from which they are made, the arms are cut free from the body, and even the legs, which are also sometimes free, are expected to carry without the help of a supporting pillar the precariously balanced weight of the whole figure. Consequently, the sculptor, distrusting his material, sometimes exaggerated the thickness of the legs and ankles to the extent that they are not only ugly but ridiculous. But although these blemishes and makeshifts show the sculptors to have been tyros in their craft, at the same time not only the uniform convention, more religious than artistic, but the artistic canon unvaryingly observed must mean that the local apprentices were guided by established principles of art. The canon, which was to prevail as long as Babylonia produced any sculpture, aimed at geometric unity for the three-dimensional representation of the human body and obtained this by approximating all masses to the forms of the cylinder and the cone. In the standing figure the head is the apex of a cone whose base is the line of the arms, and the rest of the body is a mere cylinder whose roundness is emphasized by the featureless sheath of the drapery; the entire seated figure is conoid. The Tell Asmar sculptor was thus working to rule. Furthermore, he had to keep in mind the purpose of his statue, which was to represent the subject rigidly engrossed in the contemplation of divinity. There could be no movement, no variation of attitude; but at the same time there must be some likeness to the person represented. Certainly in the treatment of the faces there is plenty of variety and a characterization which at times is comic; there is also a naïve but not wholly unsuccessful attempt to render emotion — the tenseness of the bodies, the varying angles of the heads, and the fixed gaze of the eyes do convey the rapt adoration of man confronting god.

Later statues from Khafaje illustrate the transition to a more realistic style, even in the "adorant" class — a change which was almost inevitable when the sculptor was capable of work such as the copper offering stands; and a woman's head from Tell Agrab illustrates the last stages of naturalism.

Nonetheless, religious conventions held, and the attitudes of the standing and seated figures were invariable; it was in the detailed treatment alone that innovations could be made. Drapery became far more elaborate, but it remained only a sheath that concealed the body without suggesting its form — a highly decorated cylinder. But the features of the face and the exposed parts of the body came to be rendered plastically, with delicate curves instead of the planes and angles of the old school. Perhaps because the artist had grown impatient of standard formulas, he was likely — especially in statues of women, where prettiness was in demand — to slur the devotional expression so that some of them confront us with an insipid simper unlikely to find favor with the god or with man.

But by the last phase of the early dynastic period, a great advance had been made, even within the limits of hieratic convention. This can best be seen in the sculptures from Mari, a city which at one time during this period had suzerainty over all Sumer and therefore could command the work of the finest craftsmen. The seated figure of Ebih-il (PL. 503) is a master-

piece in which the old conventions, instead of hampering the sculptor, are employed to heighten his effects; the fleece kilt is made interesting in itself by the skillful manipulation of its folds, and its traditionally shapeless mass throws into strong relief the almost morbidly delicate modeling of the smooth-skinned body, whereas, in contrast to this, the formal beard insists upon the rigidity of contemplation.

The temple statuettes described hitherto are all of small size and carved out of soft stone; the sculptor therefore was not faced with the technical difficulties involved in the use of imported boulders of hard rock. Experiments in the more recalcitrant material seem to have been made first in the southern regions, since the source was the Persian Gulf. At Ur there was found a statue in diorite of Entemena, governor of Lagash in about 2500 B.C. It stands 29½ in. high without the head, in the conventional attitude of adoration. Squat and clumsy, with the broad shoulders and sharply pointed elbows of the Tell Asmar figures, it shows in the modeling of the bare torso, the arms, and the feet some approach to the naturalism of Ebih-il and is the earliest forerunner of the Lagash statues of Gudea. Two seated figures, one of Kur-lil, in trachyte, and a headless one of a priest named Dada-ilum in basic diorite, also come from the Ur area, and in them it is easy to see how the conventional pose has been adapted to the natural form of the boulder; but neither of them ranks high as a work of art. These are the only examples of large-scale hard-stone sculpture in the round prior to the Sargonid age.

The most important relief of the early dynastic period is the Stele of the Vultures, the victory stele of Eannatum (PL. 506). Only a few fragments of this great monument remain, but they suffice to show the style and much of the design of the earliest "documentary" relief that Mesopotamian archaeology has yet produced, a named and dated stele of about 2550 B.C.

The stele is an artificially shaped slab with a rounded top, 3 ft., 4½ in. wide and at least 3 ft., 6 in. high, both sides and one edge covered with carvings in relief. It celebrates the victory of Lagash over the city of Umma and is a pictorial record of the decisive battle. For this purpose the whole field is divided into horizontal registers in which are shown different phases of the fight, arranged rather inconsequentially and explained by inscriptions on the background. Although on the reverse there are four such registers, on the obverse there are only two, to accord with the importance of the subject. The place of honor is given to Ningirsu, the god of Lagash, who grasps the net in which his enemies have been caught; behind him stands another god, of only half his height, and in a lower register Ningirsu is seen in his war chariot. The whole of this side of the monument is therefore symbolic, attributing to the divine power the issues of war and the fortunes of the state. On the reverse is shown the human side of the conflict. Eannatum advances at the head of his phalanx of heavily armed infantry over ground strewn with enemy corpses, while in front of them lions and vultures tear the bodies of the dead. In the next register Eannatum in his chariot leads on his light-armed infantry, and the foemen flee before him. Below that is represented the aftermath of victory, the Lagash dead heaped in piles being covered by their comrades with the earth of a tumulus, while the king pours a libation and prepares to sacrifice a bull in their honor. In the bottom register it would seem that the fate of the prisoners of war is being decided, and the outstretched spear of Eannatum touches the head of the *patesi* (prince-priest) of Umma, pronouncing the death sentence.

Here, then, is picturemaking of the most realistic sort, and it is interesting to note how the sculptor has tried to infuse the maximum of life into his pictures by means of a somewhat naïve experiment in perspective. The actual carving is confined to two planes; although the edges of the relief are well rounded and occasionally there is a certain amount of surface modeling, for the most part the figures are in silhouette with incised detail.

The stele of Eannatum is paralleled by a number of small limestone steles of the last years of the early dynastic period, squared slabs with a central hole which served as supports for temple offerings, maceheads, and other sacred emblems. The earliest examples date from the reign of Ur-Nina (2600

B.C.; PL. 502) and continue for two or three centuries with but little change. All are in low, two-plane relief with rounded edges and incised detail, and there is no attempt at perspective, the figures being arranged singly against the background with overlapping in only one late example, in which the four horses of a quadriga are represented by a mechanical repetition of the front outline of the head animal. The quadriga slab is the only one in which there is any ordered composition. There are three registers, the chariot and its attendants being in the lowest row; then, flanking the socket hole, two scenes of men carrying offerings, and an ox; and in the top register a banquet scene with guests, attendants, and a lyre player. The design is stereotyped, as is proved by the existence of duplicates found at Khafaje and at Ur.

Stone sculpture in the round was made for only one purpose, that of dedication in the temples, and undoubtedly religious conservatism fettered artists of progressive tendencies; but this did not apply to animal sculpture in the applied arts, where metal would be more suitable than stone. By the middle of the early dynastic period the Sumerian sculptor had advanced to complete mastery of this genre, and fortunately we possess material in plenty demonstrating the artistic qualities of these admirably preserved figures in bronze, silver, or gold and the technical skill with which they were produced, whether in *repoussé* work or by the *cire-perdue* process. The heads of cattle in bronze and silver, the goat's head from Nippur with its magnificent curling horns, the gold head of a bull with its pastiche beard showing its dedication to the god's service, and the bull's head with beard and hair of lapis lazuli against the hammered gold, as well as the decoration of the sounding boxes of harps and lyres, all represent something more than mere decorative art (PL. 505). Naturalism is given free play in such pieces as the delightful little electrum donkey on a rein ring from Ur, while at the other end of the scale is the sophisticated Fabergé-like ram in gold and silver, lapis lazuli, red sandstone, and shell, one of a pair that may have supported a table of offerings (PL. 509). This polychrome figure may well be judged an example of decadent art, and indeed Sumerian art may have been temporarily in decline at this time; however, the good tradition was still very recent, and technical skill had not deteriorated at all. Turning to metalwork, a strong and dignified piece of work is the silver vase of Entemena (PL. 504); it is equaled, however, by the gold vessels from Ur, whether we look at the exquisitely proportioned fluted and chased tumblers and bowls or at those which are without ornament and rely wholly on the perfection of their lines. It is not easy to decide whether, toward the end of the early dynastic period, technical ability had outlived inspiration or whether occasional examples of bad taste result simply from the exuberance of a technician putting his ability to the test.

b. Glyptic art. The "brocade" style of cylinder seal — in which the object to be obtained was a continuous frieze, so that pattern, for the most part linear pattern, was more important than subject — was gradually replaced by a design in which the subject matter is of greater interest; but here, as in the major reliefs, the emphasis was rather on the outline, that is, on the linear pattern composed of the animal or other figures introduced, than on interior detail. The work is on two planes distinguished by sharp edges that tend indeed to be rounded off above but still leave the upper surface flat. In order to preserve the continuity of the "frieze" when the cylinder was rolled out at length, the gem cutter was careful to make his figures overlap, so that however long the impression there should be no vertical break in the pattern. Thus in a scene consisting of fighting animals their bodies may cross one another diagonally, and some animals may be drawn head downward so as to divide the interest fairly between the top and the bottom of the frieze, showing, again, the paramount importance of pattern in design. The choice of subjects was curiously limited; the seals display either banqueting scenes with seated figures (generally drinking through tubes) and attendants, or scenes involving animals in which lions attack bulls or goats, or half-human heroes such as Gilgamesh and Enkidu fight with lions, bulls, or fabulous

monsters. In the latter part of the early dynastic period the subjects are treated in a more plastic style; the figures are more rounded and worked in relief of varying depth so that a lion's full-fronted head may stand out boldly from his body; and the whole composition becomes more crowded and filled with more violent action. All these features are illustrated by the seal impression of the "queen's scribe" from the royal cemetery at Ur. Because the seal was a mark of individual ownership, it was essential that no two should be quite alike, and since the subjects were so often identical, the gem cutter was driven to achieve variety by a complexity of treatment which in the end exhausted his resources. As a result, toward the close of the period a change set in which was to be fully developed in the succeeding Sargonid age, the figures beginning to be spaced with enough clear background between them to give them value as independent figures rather than as mere elements in a design. In this instance, at any rate, the Sumerian artist was not decadent but was able to correct his own symptoms of failure by a drastic revision of established canons.

c. Painting and drawing. In a temple at Tell Uqair, dated to the early part of the 3d millennium B.C., two animal figures, more or less complete, and human figures preserved only as high as the waist show that tempera painting upon walls was practiced and took on an elaborately pictorial character; however, that unique example does not justify an attempt to assess the value of the work of the Sumerian painter. The best evidence for the graphic art of the early dynastic period is afforded by the engraved shell plaques, fine examples of which were found in the royal cemetery at Ur. These plaques, intended for use as inlays in furniture and especially for the fronts of the sounding boxes of lyres and harps (PL. 505), are small rectangles of polished white shell ranging in size from $\frac{3}{8} \times \frac{1}{8}$ in. to $2\frac{3}{4} \times 2\frac{1}{8}$ in. Pictures were drawn on them, the ground was cut back, the interior details of the upstanding figures were engraved, and then the background and the engraved lines were filled in with niello or a combination of black and red pastes. Obviously, engravings in a hard material such as shell cannot have the freedom and spontaneity of drawings; they are comparable rather to the wood blocks of the medieval German artist. They are admirable, however, in the cleanness of their lines, the certainty of their design, and their calculated balance of black and white; and we may infer from them that the lost paintings were works of art of no mean order.

The Sargonid period. The accession of Sargon of Akkad to the throne of the united realm of Sumer and Akkad ushered in a new era of Mesopotamian art (ca. 2350-2150 B.C.). It was not a case of a violent revolution breaking the continuity of tradition. The Semitic people of the north country had long been familiar with and had gladly assimilated the arts of Sumer; but when their gradual infiltration into the south was replaced by definite control and social predominance, a new spirit was inevitably infused into the civilization of what was now a mixed people. In the major arts we cannot trace the process of change in this period, but we can see its results in two great monuments which survive.

From the ruins of Nineveh comes a bronze head, three-quarters life size, which may well be a portrait of Sargon himself (PL. 508). The bronze-casting technique was presumably taken over from the Sumerians and the stylistic conventions are Sumerian. The treatment of the hair and the fashion of hairdressing almost reproduce that of Mes-kalam-dug's helmet of three centuries before, and the formal beard also is traditional; but we know of nothing like this head in any earlier period. Although it is damaged and lacks the colored inlay that once filled the eye sockets, it yet seems a living thing instinct with a really royal majesty, although the artist adhered to the older school for nonessentials. In the case of the other of the two great Sargonid monuments the traditional element has been virtually swamped by new ideals expressed in a new idiom. In sculptural relief the change had come swiftly, for some disjointed fragments of a stele of Sargon show both the motif of the old Eannatum stele and its arrangement in registers;

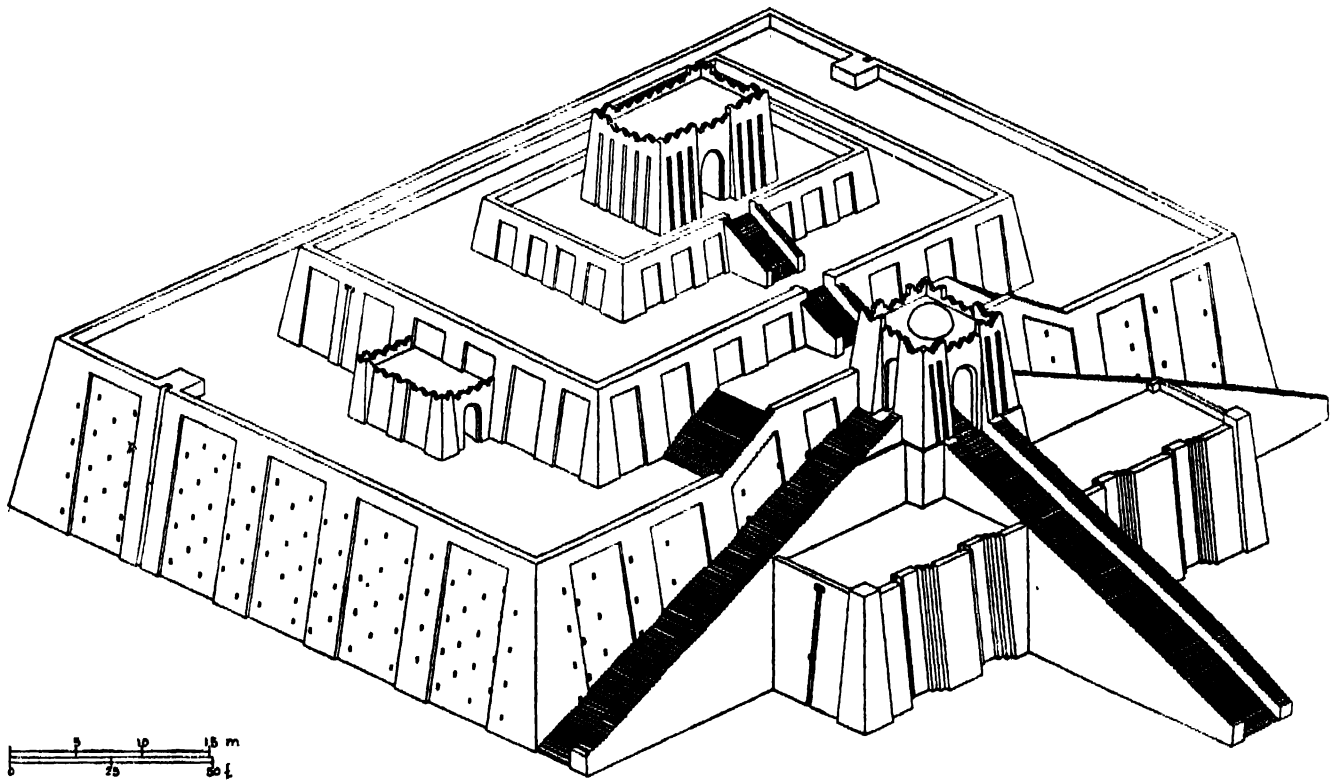
but in the relief that celebrates the victory of his grandson, Sargonid art has come into its own.

The stele of Naram-Sin (PL. 507) is a rough slab of diorite worked on one face only with a relief which is altogether pictorial in treatment and monumental in its conception. A single incident is here made typical and symbolic. The artist has dispensed with the old-fashioned registers in order to assure the unity of his subject, a victory, won by the will of the gods, it is true, but nonetheless a personal victory of the royal leader. "The actuality of the scene," as Groenewegen-Frankfort points out, "is enhanced by the setting of the event. The topography, although partly formalized, has convincingly concrete details, and both it and the incidents of the battle hold a subtle balance between the decorative and the dramatic. The roughly triangular grouping, for instance, fits the shape of the stone, but it also underlines the climax of the action; and the upward surge of the conquerors is balanced by the falling and collapsing figures, halted by the rigidity of the four doomed survivors on the right. The smooth cone of the mountain top, rising well above the impressive figure of the king, does not dwarf him in any way but seems to emphasize his human stature and at the same time check the impetuosity of his stride. For the king's posture epitomizes the movement of the soldiers, yet he appears almost immobile at the moment of his triumph, holding the enemy transfixed with fear, and though his towering figure has a symbolic quality, the spatial relation between him and his prospective victims has been made more concrete by the tilting of their heads at different angles, the lower ones looking increasingly upward. The king is thus not only the symbolical and decorative but also the actual dramatic center of the whole composition, and the empty surface surrounding him emphasizes his spatial isolation. This aloofness is enhanced, not minimized, by the divine symbols at the top of the stele. This victory, blessed by the heavenly powers, was a solitary achievement."

The process of change following the early dynastic period can best be traced in the cylinder seals, fortunately so numerous as to make comparison with the past as easy as it is informative. The tendency noted at the end of the last period to relieve the congestion of an overcrowded design by spacing the figures somewhat apart was in this period carried much further. However, it is not simply a question of the Akkadian artist's having disentangled the confusion of early dynastic composition; rather, he realized the value of background. The figures, often exquisitely engraved, gain immensely in individual importance and acquire a new spatial quality by being isolated against a plain field. Moreover, the gem cutter now produced not a continuous pattern but a picture complete in itself and his subjects are far more varied, taken from scenes of temple ritual or from mythology; but whether he is dealing with one of these or is limited by his client to the familiar theme of the battles between Gilgamesh and the lion or the bull, his treatment is not decorative but pictorial.

The neo-Sumerian period of Issin, Larsa, and Babylonia. The Sargonid dynasty was overthrown by invading savages, and when, after a period of anarchy, order was restored by the kings of the third dynasty of Ur, the shift of power to the southern delta meant a Sumerian revival (ca. 2150-2050 B.C.). Toward the end of the 2d millennium, nevertheless, new Semitic dynasties, conventionally known as the Amorite dynasties, came to power in Mesopotamia. These gave rise to a further historical and artistic phase extending from about 2050 to about 1550 B.C.

a. Architecture. Ur-Nammu, the Sumerian king of the third dynasty of Ur, was, as he boasted, a great builder, and in his time architecture had every opportunity for development. So far as the main principles of construction were concerned there could be no new departure, for all these had been worked out long before; but in the third-dynasty buildings there is a finesse for which nothing known to us from earlier periods affords any precedent. The best evidence is supplied by the ziggurat at Ur (FIG. 867). The essential feature of the ziggurat, a raised platform serving as the podium of a temple, was traditional,



Ur, ziggurat of Ur-Nammu, projection of reconstruction (from Frankfort, *The Art and Architecture of the Ancient Orient*).

and it is likely enough that the platform had by now been elaborated into a three-staged tower, though even this may have been a third-dynasty innovation. There is no architectural merit in building a rectangular block of solid brickwork and on that a smaller block and then on that a third, and it might seem that no more than that was needed to fulfill the function of a ziggurat, which was to represent the mountain of God on whose summit stood the house of God. Trees or bushes on the terraces recalled the wooded mountainsides, and a flight of steps enabled the priests to reach the topmost shrine for their ministrations to the deity. But in Ur-Nammu's ziggurat this crude plan was transformed by all the refinements of a mature architecture. The heights of the successive stages were carefully proportioned (41 ft., 7 in.; 19 ft., 7 in.; and 10 ft., 10 in.), and the brick sides of each, relieved by nonfunctional buttresses, instead of rising vertically, slope inward with a sharp batter. The corner buttresses are wider than the rest so as to tie up the design. In the ground plan the walls do not run in a straight line from corner to corner but have an outward curve of 1 in 125, and the wall face from base to top is not straight but curved, having an entasis of just over 1 in 100. There is not, in fact, a straight line in the entire building. Instead of the one essential stairway there are three, two leaning against the front wall and one projecting boldly at right angles, converging at a point between the first and the second terraces under a seemingly domed gate tower from which the side flights led down to the lowest terrace while the central flight ran straight on to the second stage and the third, on which stood the now-vanished shrine of Nannar. The architect aimed throughout at certain visual effects. The double curve of the walls — inappreciable to the eye — is meant to counteract any impression of their sagging under the central weight of the temple's superincumbent mass. The slope of the walls and the sharper angle of the stairways meeting at a central point lead the eye upward and concentrate attention on the temple that crowns the whole, and at the same time the inward batter of the successive stages exaggerates the perspective and adds to the apparent height of the building. Despite the fact that it is but a platform of solid brickwork, the ziggurat is a masterwork of architects who in the 22d century B.C. already understood the optical value of the entasis and thus anticipated the builders of the Parthenon.

b. Sculpture. The sculpture in the round of the third-dynasty period shows that the traditional art of Sumer developed under Akkadian influence to the highest level of which it was capable. Of Ur-Nammu himself and of his successors no important monument survives, but the style is amply illustrated by the whole series of portrait statues of Gudea found at Lagash (PL. 511). Perhaps because Gudea was not a king but a governor with limited authority, piety, in his statues, replaces the virile force of the Naram-Sin stele and the supreme majesty of Sargon's portrait; but, as Frankfort remarks, "Although the intense vitality of the best Akkadian works is absent from Gudea's sculptures, they possess the same firmness and precision of modeling and the same richness in the play of light provoked by the stone." Indeed, the hard diorite is carved with complete mastery and brought to an extraordinary perfection of finish. There is real observation of nature not only in the sensitive treatment of the bare flesh but also in the features, the statues showing Gudea at different times in his life. They are idealized, certainly, and purged of the accidentals of humanity; and they express no emotion but serenity and strength, just as the powerful bodies obey that cylindrical canon which combines spatial actuality with perfect composure. But they are unmistakably portraits of the real man. The same is emphatically true of a battered but beautiful head which may well represent the great king Hammurabi in his old age (PL. 512). The art of the third dynasty did not perish with the fall of Ur; in various sculptures from Mari, dated to the Isin-Larsa period, we see survivals of it, though in them the artists of what was now a provincial school tend to disguise their lack of real creative power by the overelaboration of detail, so that the hair of the bear and the fringes of the garments betray more virtuosity than genius. In the Hammurabi head, however, there is inspiration as well as masterly technique. It is interesting to contrast this with the better-known relief of the king in the presence of Shamash carved at the top of the stele bearing the famous legal code of Hammurabi (PL. 512). It is a finely executed work, and the fact that the two figures are isolated in space, with no suggestion of place and no hint of action other than the submission of a mortal to the transcendent majesty of the god, has its dramatic effect. But there is no originality in this "presentation" scene, which has its prototype in the Ur-Nammu stele and on count-

less cylinder seals; it is perhaps the best, as it is the last, of its kind. After Hammurabi there was no good Babylonian sculpture.

In this period sculpture in relief reverted to the true Sumerian type. The fragments of the great stele of Ur-Nammu indicate that it was a composition in successive registers with independent scenes whose only connecting link is the recurring figure of the ruler. One scene, that of the building of the ziggurat, is spread over two registers, though here, too, the top of the finished walling divides the figures into two rows connected by the sloped ladder. The figures are well spaced and stand out against a clear background, and they are far more lively and individual than those on any pre-Sargonid relief. If we compare this with the Naram-Sin stele (PL. 507), however, it is only too clear that art has retrogressed. Ur-Nammu's stele is — or was — a very fine thing, impressive and in some degree beautiful, but it suffers from the mechanical nature of its composition. Not only is the division of the surface dull in itself, but within the registers the duplication of the scenes — the king before the god Nannar and the king before the goddess Nin-Gal — deprives the picture of actuality and drama. It is hardly surprising to find that the contemporary ruler of Lagash, Gudea, set up a stele almost identical with Ur-Nammu's; this is a standardized design, and only in the details has the sculptor any scope for originality.

c. *Glyptic art.* The same situation prevailed with regard to the cylinder seals, a vast bulk of which have, in the third dynasty, the same subject: the owner introduced into the presence of the city's god, Nannar or another, by the family god who acts as intercessor. On this stock theme the gem cutter had to ring all possible changes, and only too often the monotony of the task led to bad workmanship. Royal seals, such as those of Bur-Sin, Gimil-Sin and Ibi-Sin, were, as might be expected, finely cut in a style closely resembling that of Ur-Nammu's stele; but the private citizen generally asked no more than a distinctive mark of ownership and a reference to the god of his choice, and the result was seldom a work of art. From this time onward few Babylonian seals possessed any real merit.

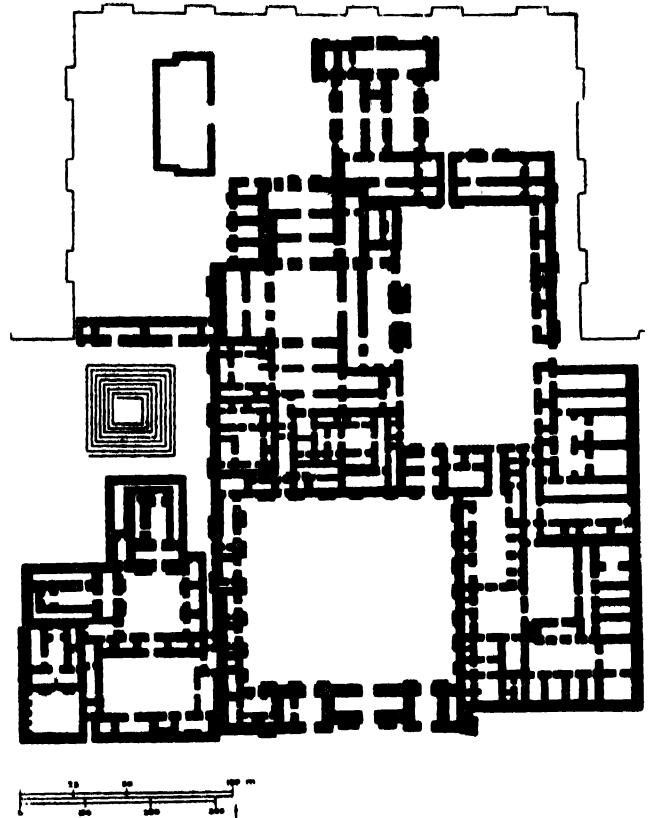
d. *Painting.* As a result of the perishable nature of wall paintings on a surface of mud plaster, virtually nothing can be known of the interior decoration of Mesopotamian buildings. Almost the only surviving painting is found in the palace at Mari, dating to the time of Hammurabi and presenting a curious mixture of style and technique (PL. 513). The principal scenes are formal and stereotyped. In the center is a rectangular framed picture of the king's investiture which might almost be an enlargement from a cylinder seal, and it is noticeable that in it the outlines of the figures were impressed with a pointed instrument in the wet plaster — the technique of an engraver rather than of a painter. The griffins, sphinxes, and human-headed bulls in compartments alongside all follow a convention long since stale, and the frieze with sacrifices by water and by fire might have been borrowed by an indifferent copyist from the steles of Ur-Nammu and Gudea. On the other hand, the minor figures, a man leading a bull to the sacrifice, a fisherman, a soldier, and the men climbing tall palm trees to gather dates, are naturalistic, free, and vivacious, and here the outlines were sketched in black paint with an ease and surety that bespeak practiced skill. The Mari paintings may be decadent and provincial, but the decadence is manifest only in those traditional Mesopotamian scenes which might have been thought *de rigueur* in a royal palace, whereas the freshness and humor of the subsidiary scenes seem to be the original contribution of a people with traditions of their own.

The Assyrian period. Toward the end of the 2d millennium B.C., and more fully in the opening centuries of the 1st, there developed, parallel with the power of the Assyrian state, an art of some grandeur which reached the apogee of its expression in stone reliefs.

There is little to say about Assyrian architecture, which lacks the element of innovation. The Assyrians inherited from the Sumerians and Babylonians their fundamental architectural

forms and used their plans and elevations. Their only innovation was a plagiarism — the type of construction known as *bti-hilani*, which was of Syro-Hittite origin. Construction was for the most part of mud bricks, stone being used only for revetments. The walls were solid, but the plan lacked originality. The Assyrian monarch asked only for a display of grandeur; consequently, the large, irregular palaces lack a coherent scheme, one element being simply added to another until a grandiose effect was achieved (FIG. 870).

In sculpture, it is noteworthy that the religious element present in the Sumerian-Akkadian tradition here played a decidedly minor role. The gods appear rarely and take no active part in the scenes represented; usually they are reduced to symbols. The scenes of "presentations," so numerous in the



Khorsabad, palace of Sargon, plan (from Frankfort, *The Art and Architecture of the Ancient Orient*).

past, were entirely abandoned, and the rare scenes of adorations are precisely those that have a less typically Assyrian air and are evidently imitations of Babylonian art. The great new concession to religious art lies in the huge, winged figures that preside at the ritual scenes (PL. 515), but these are the least convincing figures in all Assyrian art. Rigidly fixed in conventional attitudes, these colossal demons have a richness in detail similar to that of the battle scenes, with the result that their lack of "life" is accentuated. Since it was necessary to make them, the artist did so, but without conviction, producing a display of technical virtuosity and no more.

Apart from these monotonous monster figures, Assyrian reliefs (for it is impossible to speak of sculpture in the round; there are too few such pieces to allow us to form a judgment) are secular and narrative in style (PLS. 514-516). For western Asia, this is something entirely new. We have, however, insufficient material to judge of the development of this art, since when we first meet it, in the temple of Ashurnasirpal (883-859 B.C.), it is already matured and confident. The reliefs were intended to decorate the palace, and the subjects were the two activities dearest to the heart of every Assyrian monarch, war

and the chase. These two themes are treated fairly realistically; the scenes are not symbolic but rather constitute a continuous series of battles and hunts in which the king takes part as a man on the same level as his troops. Although ignorance of perspective and the necessity of fitting the frieze lend a somewhat puerile character to the composition (the figures are quite unconnected with one another and often placed one above the other), yet all this seems to have little importance inasmuch as the dramatic unity that binds the long frieze embraces also its height. The narrative sense of the Assyrian artists is so lively that it tends to obscure what is truly primitive in their works: figures are always represented in profile; warriors who guard a wall, for instance, are not proportioned properly to that wall; and trees are treated in a manner that is far from realistic. Horses, on the other hand, were observed more closely and with much greater interest. In all these reliefs, a meticulous attention to detail and a considerable accuracy contrast with the roughly molded blocks of Ur and Hittite sculpture. The figures are in low relief, but the surface is worked in a rather delicate way, and the sculptor used the fine grain of the stone to demonstrate his technical skill. The finest results of the Assyrian system of relief are to be seen in the well-known hunting scenes of King Ashurbanipal (666-626 B.C.). The surprisingly simple and effective manner in which the animals are treated has caused the leopard-hunt scene to be considered one of the masterpieces of antique sculpture. Although the simple figures, in themselves realistic and penetrating, seem disposed at random on the surface of the relief, they are bound together by their expressions of rage, agony, or dismay and achieve unity independently of the rules of perspective — a unity that is, if anything, accentuated by the empty spaces of the background.

The reliefs were designed to decorate a royal palace. Their effect was heightened by touches of color, and sometimes the whole surface was painted; in the reliefs of the Sargonid period, for example, the background was painted yellow. An exact idea of the effect can be obtained from the polychrome enameled bricks which appeared for the first time in the reign of Ashurbanipal and in which, against a yellow ground, the prisoners appear dressed in pure yellow tunics worn under blue cloaks with white fringes, while the details and the contours are black. The Sargonid bricks from Dur Sharrukin have a blue background with the figures usually in yellow in a style that foreshadows the famous representation of animals on the Gate of Ishtar in Babylon in Nebuchadnezzar's time. The color scheme is simple, but the bricks, like the reliefs, served a purely architectural purpose and, being placed on the upper part of the wall, did not need highly particularized treatment.

Above the sculptured flat stones that constituted the plinth, the walls of the palace were painted in tempera with conventional motifs, or else with figures, but naturally little of this remains. Their character becomes more evident if we look at the examples, also much damaged, of Tell Barsip, where the walls that have no stone reliefs are entirely decorated with scenes of court life in tempera. Tell Barsip was a provincial center, and the artists who worked on the decoration of the palace there were not equal to those in the capital and seat of the court; this work is much less finished, and although the whole effect is noteworthy, yet it must not be looked at too closely. The fragments of work in stone found in royal palaces such as Dur Sharrukin are technically superior, and an equal amount of care was probably also given to painting in those palaces.

The flowering of Assyrian art was due to the patronage of the monarchs; its purpose was to glorify them. Consequently, when its best works were finished and the kingdom fell, Assyrian art was involved in the catastrophe. It might have been supposed that, when the western conquest of Assyria took place, the influence of Assyrian art would have made its way into the regions affected and that it would have survived the fall of the capital. But not so. Phoenician artists for a time continued to reproduce, more or less mechanically, on bronze and gold dishes the hunting scenes of the type which had been in the past commissioned from them by the Assyrian monarchs, but apart from these nothing remained. Assyrian art was not made for export; it was the manifestation of a luxury confined to palace life, and

when the kingdom came to an end, it had no market and no further reason for existence. Only in the east did things turn out differently. The Medes who had sacked and burned Nineveh could not but be impressed with the magnificence of the royal palace with its walls on which the triumphs of the kings were depicted in stone and fresco. This was a model which must have appealed to the conquerors, and at Ecbatana and later at Susa and Persepolis, where, as in Assyria, art had a purely court character, there remained in the end some traces of Assyrian tradition. It is not a question of a literal imitation, however. The Persians preferred stone to brick and so favored the column, to which the Assyrians had attributed a minor importance; thus the Persians may be said to have created an architectural revolution by their preference. On the other hand, the winged monsters with human heads which flank the gates of Persepolis derive directly from Assyria, as does a winged genius found at Pasargadae: details are modified, perhaps through ignorance, but the nature of the influence nevertheless remains indisputable. As to the reliefs, they seem at first as if modeled on Assyrian examples, and it is true that the frescoes of Khorsabad recall these examples in their general scheme and perhaps even technically, but the idea is realized in rather a different way. The Persian reliefs are not narratives or episodes but merely processions of figures in bas-relief without any attempt at such elaboration as is found in Assyrian sculpture. The derivation is clearer in the case of the enameled reliefs that adorned the palace at Susa; here we can see to what extent Babylon, Assyria, and Persia were bound by a common inspiration and technique.

THE NEO-BABYLONIAN PERIOD. In 612 B.C. the Assyrian empire fell, and the last flowering of Mesopotamian art occurred in the rearsen Babylonian state. But though under Nabopolassar and Nebuchadnezzar it attained a considerable height, the period was a short one (625-538 B.C.). The neo-Babylonian kings reconstructed temples and palaces, especially in the capital, and one notes that the grandeur of the Assyrian conceptions is present, along with evidences of local systems of construction.

Passing over the matter of architecture, in which one cannot detect any specific innovating forces, it will be well to consider the most typical and successful instance of neo-Babylonian art, the reliefs of colored enameled brick. At Babylon these were used to decorate the Gate of Ishtar and the great processional way: the bricks have a blue background, and against this appear in relief sacred animals — dragons, bulls, and lions — in white, yellow, and rose. The function of these reliefs is not narrative, as in Assyria, but purely decorative, and as decorative art this refined and elegant late Mesopotamian art acquires an autonomous identity.

ANATOLIA AND ARMENIA. Mesopotamia was the principal area whence art spread over ancient western Asia, and the peripheral regions were subjected to its influence, among them Anatolia, in which the beginnings can be distinguished from the flowering under the Hittites, particularly in the second half of the 2d millennium B.C. As to the developments after the fall of the Hittite empire in the 1st millennium B.C., those which took place on the eastern edge of the Anatolian peninsula, in the state of Urartu, in the territory of modern Armenia, will be briefly alluded to at the end of this section, whereas developments on the western edge of this area, in Phrygia, are discussed in detail under the heading **ASIA MINOR, WESTERN: PRE-GREEK CULTURES.** Developments in the south which are linked with those of Syria will be mentioned at the end of the present article, in the section on Syro-Hittite art.

The beginnings. In Anatolia the earliest art worthy of the name is that illustrated by the contents of the tombs of Alaca Hüyük in Cappadocia, north of Yozgat. The pre-Hittite peoples who, in the latter part of the 3d millennium B.C., lived here, within easy reach of the mining districts of eastern Anatolia, were fine metalworkers, skilled in the techniques of casting, repoussé work, and inlaying of one metal with another (damascening). But apart from technical dexterity, they combined

realistic observation with a sense of style, and their animal sculpture in particular entitles them to be called artists. The Alaca Hüyük treasures (PL. 517), like those of Maikop and also the second city of Troy, show occasional resemblances to early Sumerian works. This is natural, since Sumer obtained its raw metal from Asia Minor and must have paid for it partly in finished goods which would serve as models for or kindle the imagination of the local craftsman. However, the craftsmen of Asia Minor made no slavish copies; the originality of their work is striking. The gold jug from Alaca Hüyük, the bronze stag inlaid with silver, and the engraved gold vase and the bronze bull from Maikop in the Kuban Valley north of the Caucasus are monuments of an indigenous art. In a later period something of the same sort appeared in the bronzes of Luristan.

Material is lacking whereby to trace any connection between the Alaca Hüyük tombs and the developed art of the Hittite empire, the origins of which are indeed largely unknown, such hints as we have coming from places outside the Hittite country.

The Hittite age. Stone, in which the region was rich, was extensively used in Anatolian architecture. The basements and lower parts of buildings were made of large rough-hewn blocks; only in the upper parts were bricks of baked clay and wooden beams used. The column appears late and has a limited function. There is no particular originality or independence of Mesopotamian models except perhaps in the use of windows in the side walls, in line with the niches in which were placed the statues of the gods.

Hittite art was best expressed in relief sculpture and architectural decoration. About the year 1370 B.C. the Hittite king Suppiluliumas conquered northern Syria, and it was in the course of the 14th century B.C. that the Hittite capital, Hattushash, the modern Bogazköy, and other towns such as Alaca Hüyük were adorned with gateway reliefs. The lions of Bogazköy and the sphinxes of Alaca Hüyük and Yerkapi are magnificent examples of monumental sculpture, and it is evident that they were inspired by what the Hittites had seen in Syria, for the sphinx, previously unknown in Anatolia, is the Egyptian sphinx as translated and feminized by Phoenician imitators. Purely Hittite, on the other hand, is the splendid relief of the warrior at the Royal Gate at Bogazköy (PL. 518); it is less satisfactory than the lions in that it is merely applied decoration, whereas they are constructional, but in itself it is a quite masterly work. In contrast to the flat, silhouetted relief of Egyptian and, later, Assyrian wall carvings, the Hittite figures are deeply cut (the warrior's face is almost in three-quarters round) and plastically modeled. All surface details are rendered with care and precision, the embroidery of the garments is engraved with a fine elaboration hardly in keeping with the boldness of the modeling in general, and even the hair upon the warrior's chest is represented by a delicate spiral pattern which has disconcerted the modern critic. But such elaboration does not destroy the vivid and vigorous quality of the whole. The style of these great sculptures (the Alaca Hüyük sphinxes are over 6½ ft. high) is fresh and novel, and they were carved with a technique that could result only from a sound artistic tradition; but nothing is known of their origin. If, as has been suggested by Frankfort, a Babylonian artist had been called in to instruct Hittite craftsmen in an unaccustomed art, nothing more than technical instruction was accepted from him, for in these sculptures there is nothing Mesopotamian. Their spirit is quite new and can only be called Hittite.

Some other reliefs of the 14th century B.C., such as the crude picture pieces from Alaca Hüyük, are more easily explained. In their subjects, in their flat two-plane relief, and in their drawing they have many analogies (generally, it is true, of later date) in products of the Hurri country of northern Syria and Mesopotamia. The Hittites were in close contact with the Hurri and owed a great deal to them, including the use of the cuneiform script. It would be but natural that when they decided for the first time to enrich their architecture with sculptural decoration, the Hittites should invoke the aid of Hurri stoneworkers and that these should, at the beginning, use their own traditional

motifs. At Alaca Hüyük, only the figures of the Hittite king and queen are unmistakably Hittite. When, toward the end of the 13th century B.C., the famous rock carvings of Yazilikaya were executed, although the gods represented in them are Hurri gods, yet the workmanship is in the tradition of the old gate sculptures and is altogether Hittite. The high plastic relief, the careful modeling of the bodies and, so far as the weathering of the stone allows one to judge, even the fine engraving of detail are all inherited from the Hittite past. The subject and the composition were familiar, as is proved by the seals of the period, and the group of the king being embraced by the god, which also reappears on seals, is of purely Hittite inspiration. The setting and purpose of these sculptures demanded a formal and hieratic style, and — except in the line of hurrying soldiers, where his hand was more free — the artist has worked within those imposed limits; but his well-spaced-out figures achieve a dignity and a force comparable to that of the Bogazköy relief of a warrior.

No Hittite stone sculpture in the round survives. Several bronze statuettes of gods, one found at Bogazköy itself, one of unknown origin, and a third, now in Beirut, whose head bears a striking resemblance to that of the Yerkapi sphinx, are of admirable workmanship and full of expression. From these vigorous statues in miniature we can deduce the existence of a more-than-competent school of art. The only lay figure is included in the group decorating a bronze rein ring, where a man is shown struggling with a rearing horse; it might be an illustration for the treatise on horse training and *dressage* found at Bogazköy. Here there is a freedom and a degree of naturalism that suggest an aspect of Hittite art not present in architectural sculpture or temple reliefs (see HITTITE ART).

Urartu. In Anatolia, which bore the first brunt of the invasion, the Hittites of Bogazköy disappeared. In their place, after a period of unrecorded anarchy, came the Phrygians, and in the mountainous area at the eastern end of the peninsula, the kingdom of Urartu flourished for a space of two or three centuries, until about 690 B.C., when Cimmerian raiders from the Russian steppes again brought destruction on the luckless country. Urartu certainly is deserving of mention in a history of art, for its metalwork was admirable in itself and exercised an important influence outside Anatolia. Since the early users of copper and bronze derived their metal from the Caucasus area, it is not surprising that metalworking techniques should have been developed there at a fairly early date; the few discoveries made in this little-known land confirm this assumption.

The embossed and engraved vessels from Trialeti, belonging to the middle or latter half of the 2d millennium B.C., are a case in point. Some of the Urartean bronze animal heads have a somewhat Sumerian air, but they are separated from Sumer by a long period that we have nothing to fill, though the connection cannot be altogether ruled out. The bronzes, particularly those which are parts of furniture, such as chair legs, certainly resemble and are even identical with Assyrian work; and in the 7th century B.C. Assyrian cuneiform replaces the old Urartean hieroglyphs in the inscriptions. In view of this it may be correct to define Urartu art as "peripheral Assyrian" or to say that strong Assyrian cultural influences are the cause of the "minutely close and successful imitation of Assyrian art as represented in the temple furniture." On the other hand, Sargon records the fact that the Assyrians were astonished by the Urartu bronzework that they saw when they conquered the Urartaeans and seized their city of Musasir, and it is also true that some of the shapes and motifs most characteristic of Urartu art either do not occur in Assyria or, if they do, seem rather to have been derived by Assyria from Hurri originals. However that may be, Urartu did produce finely designed and skillfully executed works in metal (PL. 524); these were not only exported to Assyria but were carried overseas, through Al Mina, the north Syrian harbor at the mouth of the Orontes River, and perhaps also by way of the Bosphorus, to the west, so that Caucasian art of the time finds its best illustration in objects from the princely tombs of Etruria (see URARTU).

SYRIA. Syria in the larger sense — that is, including Palestine — produced three principal phases of artistic flowering: the first half of the 2d millennium B.C., exemplified in the remains of Alalakh and Ugarit; the second half of the 2d millennium B.C., illustrated by the same cities as well as by the Phoenician coast; and finally the first half of the 1st millennium B.C., which witnessed the flourishing of Syro-Hittite art, developed in those cities of north Syria in which Hittite colonization survived the collapse of the state from which the colonists had sprung. When viewed as a whole, Syrian art presents a rather hybrid character.

The cities that arose on the Syrian, or Phoenician, coast depended for their existence on international trade, above all on that with Egypt and to a lesser extent that with Cyprus and Crete. From the beginning of the 3d millennium B.C., Egyptian influence on the coastal regions as far north as Byblos was fairly strong. Mesopotamian influence, on the other hand, prevailed in the interior and southern portions of the country and was due in part to commercial exchanges and in part to political control exercised over certain areas. With the addition of the Anatolian influence in the 2d millennium the picture was complete. The Syrians, by nature skilled technicians rather than creative artists, and anxious to meet the demands of business clients abroad, readily adopted foreign motifs and methods of treatment; and although in some cases they translated these into their own idiom, they not infrequently copied with such exactitude that their work could easily be taken for that of the people whose style they aped. It is principally with this art, found in the north and along the Phoenician coast, that this section will deal. The artistic production of Israel and the other states of the hinterland, such as Damascus, will be mentioned only in passing, since this work does not belong to the main stream of the developments dealt with here (see SYRO-PALESTINIAN ART).

The beginnings in North Syria. a. Architecture. In architecture the megaron type of building, the large roofed hall with four pillars grouped about a central hearth, which is found at Troy, at Alishar in the east, and at Beycesultan in the west, and which would seem to have been the model for the Homeric house, appears to be native to Anatolia and never penetrated southward into Syria. On the other hand, the postern gate tunneled through the stonework of the city wall, a feature of the defenses of Bogazköy, Alishar, Tiryns, and Mycenae, recurs at Ugarit on the Syrian coast; but as Hittite influence did not normally make itself felt there, it is more likely to have been brought to Ugarit not directly from Asia Minor but through the Mycenaeans. The half-timber form of construction, according to which the foundations of a wall would be of stone and the upper part of mud brick or of rubble strengthened by a wooden framework, which is found both in Anatolia and in northern Syria, is surely Anatolian in origin. In Anatolia nature supplied all the necessary materials in abundance; it was the obvious way in which to build; and the timber strengthening of the walls was a precautionary measure dictated by the prevalence of earthquakes. In Syria it was employed only for important structures such as temples or palaces; it was not the normal method of construction but a luxury, so much so that in a private house a fresco showing stone orthostats and heavy beams might decorate a wall which had brick foundations and contained no timber at all. It is in Syria, however, that the best examples of it are preserved. In the palace of Yarim-Lim at Alalakh, dating from the early 18th century B.C., the polished basalt orthostats that form a dado along the footing of the walls and the stout wooden framework filled in with crude brick exactly parallel the features of the palace of Minos in Crete, built a century and a half later, as also do the round, cushion-shaped basalt column bases which supported tapered wooden shafts, with the thicker end at the top and the thinner at the bottom, like those of Knossos. Here, for the first time, real concrete comes into use for pavement foundations, topped with a fine white cement which again offers analogies with Crete. How far the architecture of Alalakh is derived from northern practices it is still impossible to say, but that it in its turn exercised a

profound influence on Minoan architecture is indisputable. Even the famous frescoes of Knossos are anticipated by fragments from Alalakh in which the motifs are similar and the technique, color range, and chemical composition of the colors identical. In Crete, Minoan architecture appears suddenly and does not survive the Mycenaean conquest; in north Syria, on the contrary, a palace from the 15th century B.C. at Alalakh carries on the Yarim-Lim tradition, and the same constructional methods persist on Syro-Hittite sites until the 9th century B.C.

b. Sculpture. Although it might be rash to assert that there was no Syrian school of sculpture prior to 1500 B.C., evidence for its existence is scanty and inconclusive. At the beginning of the 2d millennium there are grotesque metal figures of gods and goddesses which certainly cannot rank as works of art. To the same period are attributed four limestone steles found at Ugarit by Schaeffer, who at first assigned them to the 13th or 12th century B.C. but later revised that view and made them contemporary with the metal figures. These steles are carved in relief, each with the representation of a single deity. In style they are mere plagiaristic copies of the Egyptian steles with which the domination of the 12th-Dynasty Pharaohs had familiarized the people of Ugarit and only emphasize the lack of any native art. It is therefore the more surprising to find at Alalakh a diorite head, 6 1/8 in. high (PL. 520), very probably a portrait of King Yarim-Lim, which has been described as "the only piece of statuary found in Syria which was made by a thoroughly competent artist. This sureness of touch, the coherence of the work, betray a hand trained in a well-established school." The head is a thing of real beauty, and the style is so distinctive that a parallel to it could scarcely be overlooked; but "there are nowhere close parallels." It is contemporary with the Mari sculptures described above, but they have nothing to compare with its freshness and vitality, and the fine Hammurabi head (PL. 512) is far more impressionistic and does not attempt the *morbidezza* of the Yarim-Lim portrait. It remains an enigma — an isolated instance.

Syro-Phoenician art. When Syrian sculpture does make its appearance, toward the close of the 15th century B.C., it is obviously tentative and inexperienced. The statue of King Idri-mi of Alalakh, carved in smooth-grained white dolomite, for all its historical interest, can claim no artistic merit. The sculptor made free use of the drill, did the final shaping with a grinder, and lastly polished the surface; for the eyes and eyebrows he employed inlay, in the traditional Sumerian manner, and relied upon paint for much of the detail. The only point of "style" is the extreme simplification of form. Simplification is carried much further in the only other known work of the period, a ram's head, possibly a gargoyle, carved in the same white stone (PL. 520). Here, although the character of the animal is unmistakable, there is a complete absence of naturalism. The face is on two planes that meet at a very slight angle; the eyes and ridiculously small ears are in such low relief as to be scarcely noticeable in a front light; and only the great ringed horns are boldly cut. Everything depends upon the play of light on the polished surface. This head is neither childish nor primitive but a deliberate though not very successful experiment by a skilled craftsman. Three lion figures, the angle stone of some monumental gateway, are two or three generations later in date and have the same experimental quality. Forerunners of all the gate lions standardized in later Syro-Hittite architecture, these lions are strangely different one from another. The sculptor, undecided as to how such a figure was to be treated if it was to conform to the lines of the building, tried every variation in turn. The Syrian bronzes are a genuine product of local art, but almost without exception they are crude, conventional, elongated figurines with disproportioned heads set on shapeless bodies, the hands emphasized because their posture symbolizes prayer, and mere sticks for the arms and legs, unmodeled and perfunctory (PL. 519). One of the very few that deserve attention, a seated figure found at Mahrife near the Lake of Homs, has a certain liveliness and dignity, but it is not typical of Phoenicia; the treatment of the drapery

indeed recalls that of the statue of Idri-mi, but the head would seem rather to be Hittite, and since Mishrife lay close to Kadesh, a Hittite capital city, Hittite influence is not far to seek (PL. 519).

Phoenician metalwork of the Bronze Age is magnificently illustrated by a gold dish and a gold bowl found at Ugarit. Because the vessels are of precious metal, it is safe to assume that they were the work of a first-class craftsman, and thanks to the qualities of the metal, they are preserved almost in the condition in which they came from the maker's hands some time between 1450 and 1350 B.C., except that the dish is broken and some parts are missing. In the dish, Aegean influence is manifest. In the bowl, however, though the lion springing upon his prey shows the Aegean convention of the flying gallop, Egyptian models have been used both for the human figures and for the sphinxes, now transformed into something that the Egyptians would scarcely have recognized, while the elaborate palmettes or "trees of life" come from Mesopotamia by way of cylinder seals of the Mitanni country. In the dish there is a real subject, the theme of the hunt (a popular theme of that age; a version of it on an ivory box from Cyprus comes fairly close to that from Ugarit) is cleverly adapted to the circle imposed by the vessel's shape without any sacrifice of actuality, and the carefully embossed figures are well modeled and energetic. In the bowl the maker has relied more upon fine engraving, the *repoussé* work being but summary, and there is no subject at all; from a mixed collection of stock figures he has composed a pattern, not a picture. In both cases the effect is rich and lively, which was just what the craftsman wanted in goods that were to be salable not only in the home country but anywhere; an eclectic and composite style met the requirements of international trade better than one hallmarked as the peculiar product of this or that land or city. By the end of the 14th century B.C. there had been developed, at least in so far as portable trade goods were concerned, what could be called an eastern Mediterranean school of art.

This is more clearly seen in the case of carvings in ivory. By far the greater proportion of the ivory available was that which Egypt obtained from the Sudan, and naturally much of this was worked by Egyptian craftsmen. But a great deal was exported by the Pharaohs as raw material, mostly to the Phoenician coast towns, and whether their finished goods were commissioned from Egypt or were meant for the general market, the Phoenician ivory carvers could not but be influenced by Egyptian models. The only other source of ivory open to Syria was the district of Niya on the middle Euphrates, where there survived herds of the Syrian elephant, elsewhere extinct; the north-country craftsmen, therefore, could be more independent in the style of their work, but even so they found it profitable to compete with their southern rivals directly. At Alalakh, in the 15th century B.C., we find ivories that we need not hesitate to attribute to local manufacture, but they are of very disparate types. Some show Hurri designs and are really local; others have the curvilinear patterns peculiar to Cretan art; and some could perfectly well pass for Egyptian originals. In this particular field, at least, art had become internationalized; when confronted by genuine masterpieces of carving, such as the relief panels from Ugarit, we can, of course, trace the influence of one or another of the art centers, but we cannot be sure whether they were carved at Ugarit or elsewhere. An ivory box lid from Ugarit, showing a goddess between two goats, has been claimed as a work of Cretan manufacture, and certainly the figure is that of the great mother goddess of the Aegean peoples and in features and dress has Minoan prototypes. Otherwise, however, the whole rendering of the subject is Asiatic, and the artist must have been a Syrian experimenting in an alien idiom. The ivory box from Cyprus, already mentioned, is Asiatic, although the theme was common in Egypt and some details of the treatment recall Minoan art. The winged and crested griffin certainly seems to be a Phoenician invention, for it is found on many cylinder seals of Syrian provenance and on ivories from Megiddo and Phoenician Enkomi in Cyprus and became a favorite motif in other lands, appearing as a fresco in the throne room of Minoan Knossos and in the wall reliefs of later Assyrian kings. But its popularity may well be due to

the fact that as conceived by the Phoenicians it was still derivative and combined features akin to all the arts of the Middle Eastern countries. Generally, it is Egyptian influence that predominates in the ivories of the 2d millennium B.C. In the 1st millennium, when Egypt was no longer the great power and when the center of political sovereignty, and of wealthy patronage, shifted to the east, the Asiatic element received greater emphasis. The ivories of Arslan Tash, of Samaria and Megiddo, of Khorsabad and Nimrud belong to a single school that must be defined by its character and not by any geographical location, a school which had adapted its earlier tradition based on Egypt to the demands of a market subservient to Assyrian taste. If from these widely distant sites there come ivory carvings of identical design, it is because the artists were drawing upon a common stock of purely decorative themes; whatever religious significance the traditional subjects may have possessed had long since been forgotten and their aim now was to commend their goods by attractive design, subtle craftsmanship, and richness of decoration. This they did indeed achieve. Nothing could be finer than a pair of plaques for inlay found at Nimrud and dated to the reign of Sargon II (722-705 B.C.), which represent an Ethiopian being killed by a lion (PL. 510). The carving is amazingly delicate, the design, with its suggestion of violent movement arrested by death, is masterly, and the spare use of gold upon the ivory figures set against a flowered background enriched with gold and lapis lazuli and carnelian inlay produced a gorgeous polychromy that enhances the beauty of the actual carving.

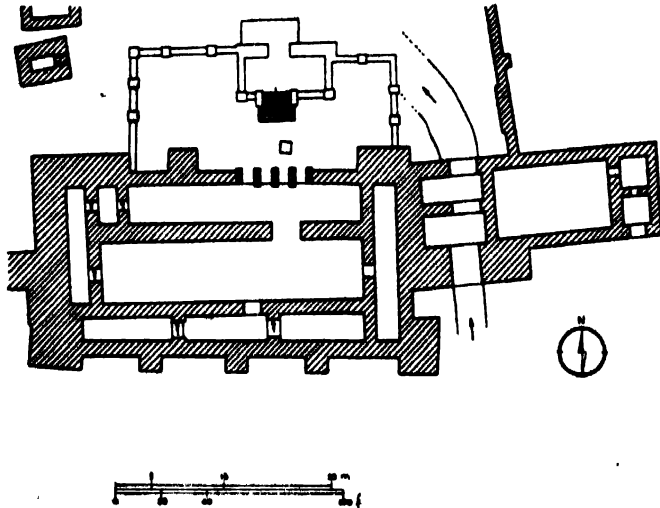
The same mixture of semi-Egyptian tradition and Mesopotamian influences can be seen in the later Phoenician bronze bowls, of which examples are found alike in Nimrud, in Cyprus, and in Etruria, but it is noticeable that the Assyrian element is weakest in vessels intended for the western market, where Egyptian art was more familiar. These bowls, with their embossed and engraved designs, their elaborated and well-drawn figurework, and the over-all decoration of their surface, are very fine within their limits, and they played an important role in the history of art in that they introduced motifs and themes to the artists of 8th-century Greece, enabling them to cut adrift from the outworn tradition of the Geometric period. But apart from their technical excellence, their main attraction lies in the skillful arrangement of hackneyed motifs; they exhibit an acute sense of decorative effect but no inspiration.

If, in discussing the Phoenician arts of ivory carving and of metalwork, we have passed without interruption from the 2d into the 1st millennium B.C., it is because the Phoenicians, in their coastal or island harbor towns and with their colonial offshoots in Cyprus, suffered less than did most of their neighbors from the great movement of peoples which in 1194 B.C. overthrew kingdoms, destroyed ancient cities, and even changed the racial character of the population of Asia Minor and large tracts of Syria and Palestine. Hence the longer continuation of their art (see PHOENICIAN-PUNIC ART).

Syro-Hittite art. Although the great invasion of 1194 B.C. meant for Syria the end of the Bronze Age and the beginning of the Iron Age, it meant also the complete breakdown of the old political order. Ramses III did indeed halt the invaders, but Egypt's hold on Palestine and southern Syria was gradually relaxed until, under the later Ramessides, the name of Pharaoh ceased even to command respect. Northern Syria had long been more or less under the rule of Bogazköy, for now that the Hittite empire had been wiped out, the provincial seats of government set themselves up as independent city-states. But the Hittite element in them was strong and was reinforced, presumably, by refugees from Hattushash, so that these states preserved and further developed the culture and art of the old Anatolian capital. In Syria, during the first half of the 1st millennium B.C., it is to the Syro-Hittite centers that we must look for anything that can be called creative art or indeed for any originality of conception and design. The Phoenicians of the southern coastal towns continued to supply the Mediterranean markets with admirable examples of imitative art. Although they were skillful builders, they left no real monument

of architecture — even the lion-supported monolithic tomb at 'Amrit is derivative in style and remarkable chiefly for the immense size of the main block, which recalls the huge stones used in the wall of the Baalbek acropolis. And the mainland sculptors copied sometimes a Hittite, more often an Egyptian, model but produced very little. Thus there is no Syrian counterpart to the wealth of "Phoenician" sculpture that enriched the tombs and temples of Cyprus (see CYPRIOTE ART, ANCIENT).

a. Architecture. In architecture the Syro-Hittites introduced a novelty which was to be greatly admired and deliberately



Tell Halaf, palace of Kaparu, plan (from Frankfort, *The Art and Architecture of the Ancient Orient*).

copied by the Assyrians, the *bit-hilani*, a self-contained unit consisting of a walled courtyard at the far end of which was the porticoed façade of the *hilani* proper (FIG. 879). Between two very solid wings, two or three columns spaced well apart across the wide entry gave the building its distinctive character. Behind them, either directly behind or reached through a shallow lobby, was the main room, long and narrow, sometimes with subsidiary chambers along its back and sides but always with a staircase leading to an upper room which would seem to have had a great window looking out over the front court. It is an architectural type not found in Anatolia, purely Syrian in origin and probably evolved from the much simpler north Syrian temple of the 3d millennium B.C., although this had no columned portico. In its mature form it gave scope for very effective decoration. In all Syro-Hittite architecture there is an elaboration of ornament exceeding anything known to us from the 2d millennium. Specifically, the big stone orthostats in the gateways of cities or palaces and along terrace fronts were now covered with carvings in relief, and the plain, cushion-shaped column bases of the past were now flanked by lions or sculptured into intricate patterns (PL. 523). Where in the old days the isolated lion figures on the angle stones emphasized the sobriety of the massive architecture, the new fashion delighted in long rows of sculptured slabs running the whole length of the wall, the effect often varied by the use of black basalt and white limestone for alternate slabs, while the scenes or figures carved upon them were picked out in brilliant colors. Above the orthostats the face of the half-timbered mud-brick wall might be concealed by wooden paneling or by a skin of enameled bricks — at Carchemish, sky blue studded with white and yellow marguerites or blue, yellow, and white chevrons and lozenges — and perhaps also with painted designs upon a whitewashed ground. In the palace of Kaparu at Tell Halaf (FIG. 879), a provincial architect of the 8th century B.C., working under Assyrian influence, ventured to substitute for the normal column shaft caryatidlike figures of men standing upon lion and bull bases to enrich the façade of his *hilani*, an experiment which does not appear to have been followed

up elsewhere and is indeed artistically speaking a failure. It must be admitted that a great deal of the Syro-Hittite sculpture is lamentably poor in quality; local princelings were prone to advertise their importance by ambitious building, but they could not command the services of trained artists. In the outlying principalities this was almost inevitable. Tell Halaf is a case in point; at Karatepe King Asitawandas, probably toward the end of the 8th century, may have employed Phoenician craftsmen to execute his Syro-Hittite carvings, but the long lines of reliefs, however interesting their subjects, are frankly grotesque and have been well described as "unseemly." Far better work is to be seen at Zincirli and at Sakjegeuzi; and in the capital cities of the major states, at Malatya, Carchemish, and Marash, Syro-Hittite art is at its best.

b. Sculpture. In the earlier reliefs, and in all those from provincial sites, the work is very flat: the figures are sometimes merely outlined or, more often, the ground round them is cut back so as to give two planes, and details are engraved only. Later the better sculptors tended to work in much higher relief, and the figures, no longer confined to a single plane, are rendered in the quarter round, while even where the general effect is still rather flat, faces, arms, and legs are molded instead of being silhouetted with details superficially incised. A technical advance of so pronounced a character would surely imply that the Syro-Hittite school of sculpture marked a new departure. There had been carved orthostats long before this, in the architecture of the Anatolian Hittites; the Alaca Hüyük slabs and a 13th-century royal relief from Alalakh, in the flattest and crudest style possible, give proof of this. But with the multiplication of sculpture ornament in the new city-states of Syria the unprecedented demand was met by stone carvers scarcely informed by precedent and held back from innovation less by tradition than by inexperience. In such circumstances the real artist had every chance of striking out along a new line.

Together with the change in the technique of the reliefs there is a change of subject equally striking to the modern observer. In most of the sculptured walls, each orthostat bears a picture complete in itself, but the pictures seem to bear no relation one to another. On adjacent slabs there may be a fabulous monster, a group of acrobats, a mythological scene, a hunt, a band of musicians, a warrior on horseback, and a lion bringing down a bull; the whole array seems haphazard and meaningless. On the other hand, at Carchemish, the capital city, the later reliefs, dated by inscriptions, give logical and continuous scenes: the victorious army restores the gods to their shrines, the king and his family greet or are greeted by the captains of the host, a long procession of soldiers and priestesses escorts the image of the city's goddess. There is here a unity that has real artistic value, a unity which the sculptor has emphasized both by the exclusive use of basalt and by the repetition of identical figures, reserving singularity for that part of his composition which should be the center of interest. But although the artist has known how to profit by the change of subject, he cannot have been himself responsible for it; there must have been a reason for what appears to us the capricious disarrangement of the old pictorial reliefs. If, as has been suggested, they are illustrations for some myth or story unknown to us but familiar to the contemporary observer, it would mean that the sculptor was indeed at liberty to select the incidents he would represent or symbolize in his "strip" series but was still bound by the text of the story. Further, since all the incidents were of equal importance, equal justice had to be done to each, and a disjointed effect was unavoidable; consequently, the sculptor would sometimes accentuate it by using alternate orthostats of black and white stone. It was only when his royal patron commissioned a record of contemporary history that he could treat the subject as a whole and exercise his powers of composition.

In the best of the late reliefs, as in the "royal buttress" at Carchemish, fine technique is combined with that monumental treatment which architectural sculpture demands, and in this case with an almost playful realism that might easily clash but does not (PL. 522). The monumental character of

ASIA, WEST: ANCIENT ART

Syro-Hittite art is apparent in the great rock relief at Ivris (PL. 521), but in the purely Hittite figure of the god rather than in that of the Assyrianized royal worshiper. It was an art more suited to carving in relief than to sculpture in the round. The seated figure of the god Atarluhas at Carchemish has a certain ponderous majesty due in part to its curious geometric scheme in which a cylinder is set upon a cube. But the colossal statue of a king from Malatya must be ranked as a failure, and the ill-proportioned cylindrical statue of a god from Zincirli (a virtual duplicate was found at Carchemish, so it may be purely traditional) is deplorable. But in decorative work, where the imagination was not shackled by religious conventions, the Syro-Hittite sculptor could produce a masterpiece such as the double lion column base from Tell Taynat, in which extreme stylization, instead of deadening the work transmutes it into a supernatural ideal. From the same site comes the most elaborate example of the decorative column base with an intricate pattern of cords and guilloches, rosettes and palmettes, variations of which occur not only in Hittite countries but as far afield as Khorsabad. Hiram's Phoenician craftsmen took as their model the decorative architecture of the Syro-Hittites when they carved upon the walls of Solomon's temple and engraved on its doors "cherubim and palm trees and open flowers" (1 Kings, 7:17), adorned the capitals of the columns with "nets of checkerwork and wreaths of chainwork and pomegranates" (1 Kings, 7:23-26), and set the great laver on the backs of supporting oxen. At Megiddo there have been found capitals of a simpler type derived probably from an Egyptian original but modified into something specifically Syrian and akin to if not actually germane to Syro-Hittite architecture, for a not dissimilar form is represented on a Carchemish relief; two volutes springing from the sides of a triangle seem to anticipate a familiar Greek form, and it may well be that these "proto-Ionic" capitals are in fact the ancestors of those of Ionia (PL. 526). When, therefore, the Assyrian armies overran one by one the city-states of what they still called "the great Hatti," and when at last Nebuchadnezzar in 604 B.C. laid Carchemish waste, there perished a very vigorous art which assimilated certain foreign influences without losing its essentially national character and could on its merits stand comparison with all but the highest of the arts of the Middle East.

CONCLUSION. In the preceding pages an attempt has been made to evaluate the art of western Asia, necessarily proceeding example by example. Although it is perfectly permissible to speak of a Sumerian, a Hittite, an Assyrian art separately, we should remember that in the ancient world, wars, trade, and migration brought otherwise-separated peoples into contact and that not only objects but ideas and inventions passed easily from one country to another. It is also well to bear in mind that apart from the historic cities where the arts flourished there were peoples who produced perhaps little of value but who acted as intermediaries and were, so to speak, the brokers of ideas, rendering in this way a modest but not unimportant service to the arts. If we are to obtain an idea of Egyptian art of the 1st Dynasty it is necessary to know something of Sumerian art of the period of Jamdat Nasr. On the other hand, Egyptian art of the New Kingdom is subject to Cretan influences; the Hittites owed much to Mesopotamia, and Persia imitated Assyrian schemes. No one of these countries could have developed its particular culture without contact with the others. The best proof of this is the extraordinary collection of ivory sculptures found at Nimrud, which were part of the furnishings of the royal palaces (PL. 526). These might be called Phoenician, and no doubt the greater part of them came from the workshops of those ivory carvers on the Phoenician coast whose skill was praised by Homer and the Hebrew prophets alike. Some of the sculptures are perhaps of local manufacture; others come from inland Syrian cities. As far as subject and style go, they reveal characteristics of various countries: the sphinxes are of Egyptian origin, but they have been transformed and have become more feminine to suit the Phoenician taste; the processions of warriors are an Assyrian motif; the courtesan at the window is Syrian (PL. 526); the delicate relief of deer suck-

ling their young is reminiscent of Crete; and elsewhere we can detect the influence of Ur and Mitanni. The artists, who worked for the Assyrian kings, then, were cosmopolitan in their style, and ivories in every way similar to theirs have been discovered in Arslan Tash in northern Syria, at Megiddo in central Syria, and at Samaria in Palestine; for the most part it is a question of working on a large scale for the international market, and to gain a clientele the manufacturers adapted themselves willingly to the taste of various countries. Although it would be an exaggeration for us to speak of a single or unified culture, we must recognize the existence of a free exchange of ideas and of artistic "manners" and, further, the fact that even the most independent local art was apt to be influenced by that of a neighboring country or even by more distant countries and by entirely alien people. Distance, in fact, was the least of the obstacles to communication. The wearers of bronze necklaces who dedicated the first fruits of the season in the temples of Byblos on the Syrian coast went to the west to trade, and the tombs of some of them have been found as far afield as Alsace. From Mohenjo-daro merchants of the Indus sent their agents to Mesopotamia, and for one of these a gem engraver of Ur made a cylindrical seal in the style of Harappa. From the Crimea a great steppe extends across Central Asia to Mongolia, a grazing country of nomadic tribes in a primitive state; here lived the Scythians in the west and the Mongols in the far east, people of different origin but having a somewhat similar way of life. They exchanged textiles and carpets for arms and objects of luxury produced in the empires to the south; occasionally, when they had sufficient forces, they made excursions and raids on southern cities, but they could be bought off with costly gifts. In this system, merchandise passed from hand to hand, so that Persian products in the end reached southeastern Europe, and Scythian animal forms served as models for Chinese jewelers. The populations of the steppe, themselves barbarians, served nevertheless as a link between cultures otherwise remote. Ideas and technical notions also were quickly spread and soon assimilated. Kings exchanged artists and paid salaries to foreign artists, as exemplified by Solomon's employing Phoenician builders on the Temple of Jerusalem; or, again, they lent their artists to friendly sovereigns as an act of courtesy. The pottery workers of Cyprus succeeded in establishing factories on the coast of Syria so that they could produce, without the risks attendant on transportation by sea, fine "Cypriote" pottery which was in reality a copy of certain types found in Asia Minor. Bronze dishes from Urartu (PL. 524), around Lake Van, were shipped across northern Syria to be acquired ultimately by Etruscan nobles, and we know that a Pharaoh called Cretan painters to Egypt to adorn his palace with frescoes. All these examples prove that there were artistic exchanges among various cultures, and it is certain that in ancient times these interchanges were more continuous and influential in the region treated here than elsewhere in Asia. In this region, also, it is easier to classify the general developments strictly by time and place; in this sense the 3d millennium belongs to Mesopotamia; the 2d sees the spread of Mesopotamian influence to neighboring countries; and the 1st millennium reveals the clear emergence of the peripheral regions in which, besides the original neo-Assyrian and neo-Babylonian productions, we find the Urartean, the Syro-Phoenician, and the Syro-Hittite. This is the time of the greatest intermingling of styles. Indeed, this last phase includes a large eclectic production and a great diffusion of near-Asiatic motifs westward (see ORIENTALIZING STYLE). Finally, the fall of Babylon (538 B.C.) marks the end of the artistic cycle here treated. The legacy is bequeathed to Persia, where it exercises a determining influence and whence it passes successively to the Hellenistic, Roman, and Byzantine worlds in proportion to the extent of their several penetrations into the Near East.

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Leonard WOOLLEY

Illustrations: PLS. 501-526; 5 figs. in text.

ASIA MINOR, WESTERN: PRE-GREEK CULTURES; EARLY GREEK INFLUENCES. Following the migrations and upheavals of the period of the "Peoples of the Sea" (ca. 1200 B.C.), the Anatolian peninsula, which had been strongly influenced by Mesopotamian culture in the 2d millennium B.C. at the time of the flourishing of the Hittites (see ASIA, WEST: ANCIENT ART; HITTITE ART), gravitated toward the West instead. With the Achæan penetration, at least the western shore of Asia Minor had in part already been attracted into the orbit of Western culture, and the Thracian-Phrygian invasion, the fall of the Hittite empire, and Aeolian and Ionian colonization followed. Thus, although the art of western Asia Minor had earlier been rather clearly subdivided into cultural areas corresponding to the peoples flourishing in its territory (Phrygians, Lydians, Lycians, and Carians), in the course of the 1st millennium B.C. it came to be determined by Greek influence, however marginal and affected by local elements, rather than by its Eastern heritage (see ARCHAIC ART; CLASSIC ART; HELLENISTIC ART). Its most evident connections, at least in archaic times, were with the art of the Greek cities of Asia Minor (see GREEK ART, EASTERN).

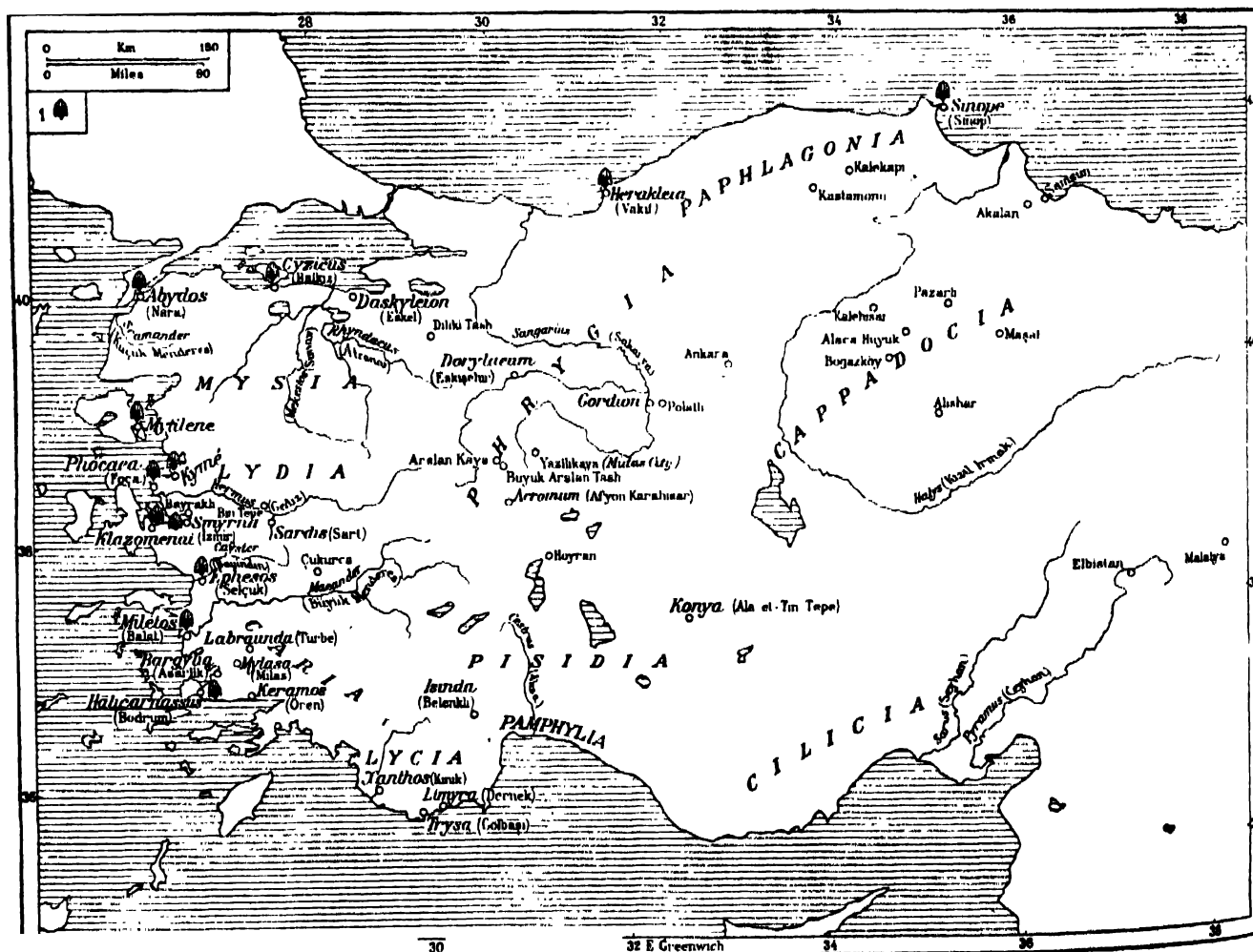
SUMMARY. Phrygia (col. 884): *Pottery*: a. Early Phrygian style; b. Transitional style; c. Mature Phrygian style; d. Late Phrygian

style; Sculpture; Bronzes; Architecture and rock monuments; Conclusions. Lycia (col. 890): *Architecture; Sculpture.* Lydia (col. 896): *Pottery; Architecture; Metalwork and jewelry; Coinage; Sculpture.* Caria (col. 898): *Pottery; Architecture; Sculpture.*

PHRYGIA. The Phrygians spoke an Indo-European language; according to tradition, they came originally from the Balkans and were related to the Thracians. They were certainly already settled in the interior of western Anatolia at the end of the 2d millennium B.C. (a text of the late period of the great Hittite empire contains a reference to a King Mita of the land of Pakhuwa, whose name has been linked with that of the Phrygian king Midas; and Assyrian sources dating from the time of King Tiglath-pileser I — 1115-1093 B.C. — refer to the Mushki, who can be identified with the Phrygians). A Phrygian civilization flourished especially between the 8th and 6th century B.C., at the time of the formation of a united Phrygian kingdom and in the following period, which was characterized by small local principalities that acknowledged the sovereignty of the Lydians, the Medes, and the Persians. The most characteristic artistic remains of this civilization are its pottery and its rock monuments.

Pottery. Phrygian pottery, which has been sufficiently studied to offer dependable points of reference for a chronological and geographical arrangement, can be subdivided into four distinct groups.

a. *Early Phrygian style.* Concentric circles, radiating lines, stylized trees, and, especially, silhouette figures with a geometric flavor constitute the principal characteristics of this style

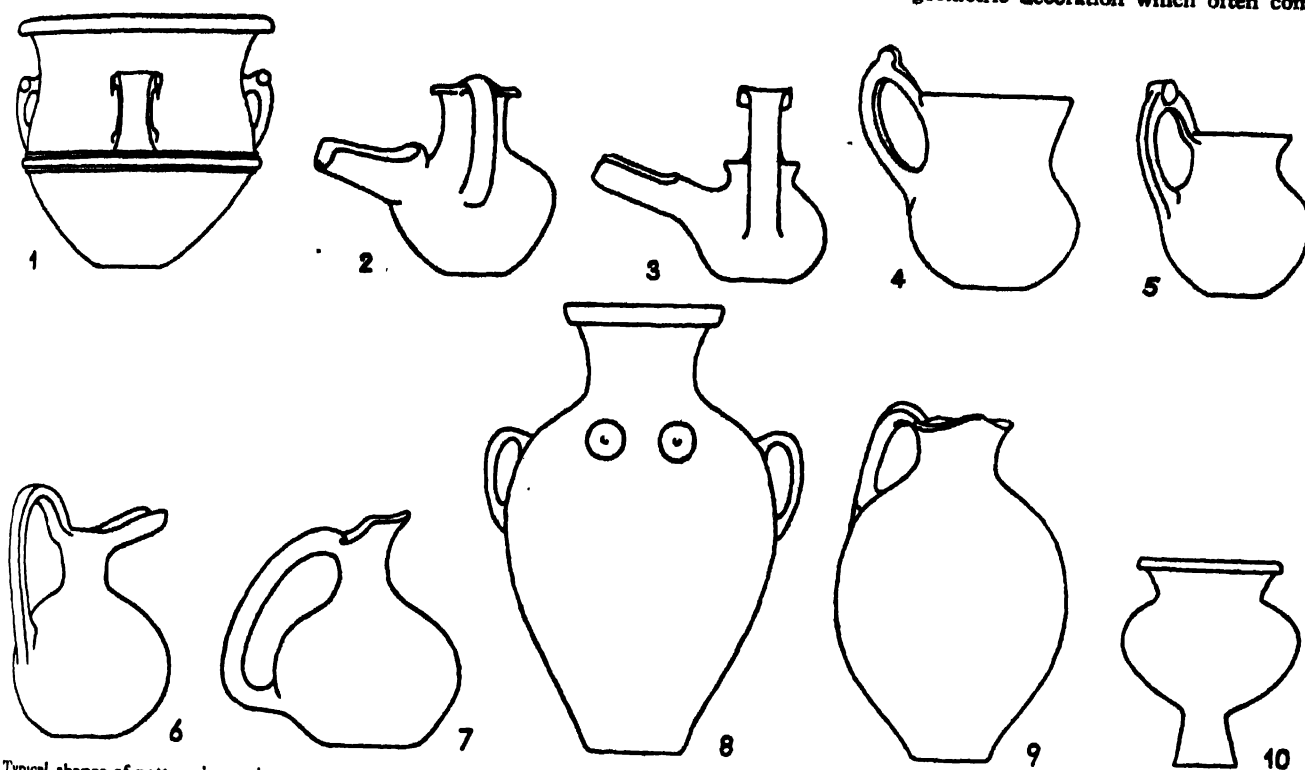


Centers of the Phrygian, Lycian, Lydian, and Carian civilisations. Key: (1) Greek colonies.

(PL. 527). The animals represented in silhouette are usually deer and goats and occasionally horses, birds, and fish. No representations of human figures have as yet been found. The clay, grayish-yellow or reddish, and often not completely baked, is coarse and contains small white and gray pebbles. Quite often the vases have a thin light-brown or even brownish-gray

disappeared. The earliest appearance in these vases of decoration of a sub-Geometric type and new forms is especially important. They can be dated to about the decade 735-725 B.C.

c. *Mature Phrygian style.* The chief characteristic of this style is the rectilinear geometric decoration which often com-



Typical shapes of pottery in ancient western Asia Minor. (1) Early Phrygian style; (2-7) mature Phrygian style; (8-9) late Phrygian style; (10) the "lydion."

slip, generally with a rough surface. The ornamental motifs and silhouettes are painted on by brush in a dull, dark brown. The three-part construction of the vase, resulting from the position of the handles, is emphasized by the corresponding arrangement of the decoration. The lower part, which is almost a third of the total height, does not have any ornament (it was perhaps not visible, since the vase was probably placed on a clay or wooden pedestal or buried in the ground up to its belly). The widest part of the vase is swollen in profile, decorated with a roundel or some other linear ornament, and divided into three sections: the principal one almost always contains an image, whereas the shoulders and neck are adorned with decorative motifs but are separated from one another horizontally in the narrowest part of the neck. The feeling of deliberate architectonic subdivision is evidenced by the two or three verticals forming triglyphs which frame the figural and ornamental motifs, drawing together the various fields separated by horizontals so that a composition of metopes and triglyphs results. Furthermore, the vertical lines on the sides form an area clearly separated from the handles. This early Phrygian style, which can be dated between 750 and 730 B.C. approximately, is represented at Alishar and Bogazkoy, as well as at Konya, Maşat, and Malatya, but has not been found at Gordion. The shape of the vases is of Phrygian origin; it consists chiefly of a large crater (on the average about 16 in. high and 20 in. wide), usually with a wide belly and with two or four handles (FIG. 885). But the decorative motifs — concentric circles, radiating lines, and geometric figures of animals in silhouette — were derived from Greek prototypes or inspired by themes from the Greek Geometric style.

b. *Transitional style.* A middle position between the early Phrygian style and the mature Phrygian style is occupied by a series of vases in which the silhouette figures and concentric circles remain but the radiating lines and stylized trees have

pletely covers the whole vase; the motifs are mainly the meander and its derivatives, squares, lozenges, quadrilaterals, and triangles with latticework or dots and lines, as well as zigzag designs, ribbons with knots, and checkers, which are generally distributed horizontally. Concentric circles occur less frequently than before, the characteristic feature being rather a series of short semicircles accompanied by straight lines. See FIG. 893. The silhouette figures of the early and transitional Phrygian styles have completely disappeared and have been replaced by highly stylized representations of animals and patterns of lines and dots used exclusively as ornamental motifs and no longer as complements to the structure of the vase (PL. 527). In comparison to the early Phrygian style, the clay is clearer and much finer, though it is still only slightly baked and therefore rather soft. The surface of the vase is highly polished, and in some examples from Gordion the base has a splendid ivorylike sheen. The coloring, of a dull tone varying from dark brown to reddish brown, is applied directly on the base with a brush. The system of decoration is freed from its function as a complement to the tectonics of the vase and acquires the effect of a highly decorative carpet covering it. One of the most important characteristics of this style is the decrease in the size of the vases: the average height is now between 3 1/8 and 4 in., and an occasional vase is about 6 in. high. In comparison to the earlier periods, the shapes are of an incomparably richer variety. The principal ones are wide-mouthed pitchers with high handles (PL. 527); pitchers with a spout and a long handle; globular pitchers with a strainer, high handles, and spouts of an exaggerated length; and deep dishes without handles (FIG. 885).

The mature Phrygian style has three quite distinct phases. The first, known as the "fine style," bears in its most noteworthy examples the imprint of the late Geometric and even sub-Geometric Greek styles and can be dated in the period 725-676 B.C., which begins with the foundation of the city of Gordion and ends with its destruction at the hands of the

Cimmerians. The second phase, in which decline is apparent, comes to an end toward the middle of the 7th century B.C. The third phase, in which Phrygian elements lose their importance and Greek borrowings increase, represents a provincial variety of sub-Geometric and Orientalizing Greek pottery and occupies the entire latter half of the 7th century B.C.

d. Late Phrygian style. This can be distinguished from the mature Phrygian style by its complete renunciation of a coherent geometric synthesis. The vases can be divided into two groups according to style of decoration: vases in various shapes decorated with highly stylized figures of animals, and pitchers with trilobate spouts and other vases with a simple ornamental decoration on their shoulders. Vases of the first group are characteristic: on the belly and shoulders of the large pitchers and on the plates and other kinds of vessels there are inorganic and schematic renderings of animals which are filled with lines and dots or with concentric circles. The conception is rather modest and provincial, especially in the examples found at Alishar and Elbistan, and similar vases of a higher quality found at Bogazköy seem to have been the models for those at Alishar and Elbistan. The second group have on their shoulders, not representations of figures, but simple ornaments of meanders, triangles, and, especially, horizontal parallel lines. Examples of this group have come to light in the latest strata at Alishar, Bogazköy, and Maşat, as well as at Pazarli, Akalan, and Sinope, and in the vicinity of Ankara; at Sinope they were uncovered together with goblets of a miniature type, which can be dated to a period immediately preceding the middle of the 6th century B.C. From this point of reference and other indexes, the late Phrygian style can be dated essentially to the first half of the 6th century B.C., but much later examples, according to the degree of isolation of the area from which they originate, might even date from the 5th century B.C. A final flowering of Phrygian pottery in the Hellenistic age is represented chiefly by the rhyta uncovered at Samsun and by vases incorrectly designated as Galatian.

Sculpture. Only a few, generally badly preserved, remnants of sculpture have come down to us, and it is therefore impossible to form as clear an idea of this branch of Phrygian art as of pottery.

The rock reliefs near Afyon Karahisar and Eskişehir are the most important of the many in existence, and in every one of them some points of reference can be found which lead to a determination of the style and the period. Thus, for example, though its surface has been greatly worn by the weather, the tomb at Büyük Arslan Taş (PL. 528) has stylistic features which offer certain evidence: the shape of the lions' heads undoubtedly bears a Hittite imprint, seen in the strange shape of the forehead and nasal area, which is quite short in relation to the exaggeratedly long mouth area, while the two small recumbent lions, similarly rendered on the two sides of the door of the tomb, show by their heads and the posture of their bodies that they are derived from the type of Ionian lions current in the 6th century B.C. and must be dated after that time. The cult monument at Arslan Kaya, decorated with a series of sculptures, gives evidence of other Greek influences: the heads of the sphinxes on the pediment, placed on long necks, together with their oval-shaped faces, which widen from the chin to the forehead, bear a genuine archaic-Greek imprint and are clearly differentiated from the later-Hittite and Assyrian sphinxes. The figure of Cybele in the middle of the niche, flanked by two rounded lions, must be placed at about the middle of the 6th century B.C., like a similar figure of Cybele in an isolated niche near the sepulchral monument at Arslan Kaya (PL. 528). A draped statue from the so-called "Midas City," of which we have only the lower part, might be the work of a Phrygian, of the second quarter of the 6th century B.C., influenced by Ionian sculptors. All these considerations, based particularly on a comparison with the sculpture of eastern Greece, definitely preclude the dating of these monuments in the 8th century B.C., as had been done by some scholars.

In the field of Phrygian rock sculpture, the ruins of the

so-called "Lion Tomb" (PL. 529) in the Rahat Dagħ area are especially significant. In this monument, the figures of the animals, in the stylization of the nose and in the shoulder blades shaped like figure eights, recall Iranian prototypes of the late Achaemenian period, and they even have some features suggesting Assyrian and Hittite origin. However, the relief of the warriors killing the Gorgon, which was located on the façade of the same tomb but has since fallen, shows, especially in the drapery, clear connections with Ionian art of no earlier than the middle of the 6th century B.C.; this confirms the dating on the basis of comparison with monuments of Persian art.

The oldest works of Phrygian sculpture which have been noted up to the present were uncovered at Gordion. However, they are not monumental works, but two rather crude little lions which decorated the façade of a house dating from the beginning of the 7th century B.C. Their wide-open mouths, with protruding teeth that rest on the chin and the three wrinkles below the nose suggest that they were created under the influence of the Assyrianized Hittite lions of the end of the 8th century B.C. Aside from the already-mentioned works of the 6th century B.C. and two bas-reliefs of the 5th century at the Konya museum, there are no other examples of Phrygian sculpture until the time when relief carving seems to have flourished once more in Phrygia during Roman times: the so-called "Solon Tomb" and the highly stylized funerary steles with peculiar renderings of husbands and wives are works of the late Roman period which, though within the orbit of provincial Hellenistic-Roman sculpture, continue motifs of the old Phrygian tradition until the end of antiquity.

The architectural reliefs of painted terra cotta, which flourished at about the same time as Greek archaic sculpture, are of great interest. Examples have been uncovered at Gordion, Akalan, Pazarli (PL. 530) and the Midas City. In conception and style, they can in many ways be grouped with similar eastern-Greek reliefs, especially those of the Aeolians, found at Neandria and at Larisa on the Hermus. The slabs at Pazarli also contain numerous Orientalizing elements which give the impression of early work but which in reality date only from the second half of the 6th century B.C. The only Phrygian characteristic in the terra cotta is the use of the meander and a series of contingent squares (cf. FIG. 893).

Bronzes. The best works in bronze come from the tumuli at Gordion and Ankara. They consist mainly of cauldrons, plates with ring handles, umbilicated goblets, long-spouted pitchers with strainers, ladles, and ornamental objects such as fibulas, pins, belt buckles, and various kinds of weapons. The most important bronze vessels are cauldrons with figures of "sirens" of a Urartean type, probably imported from Urartu, discovered in the great tumulus at Gordion, and the plates with ring handles and bobbin-shaped attachments uncovered at Ankara in the tomb at Fidanlık, dating from the beginning of the 7th century B.C. (PL. 531). The same handle appears on a clay basin from the end of the 8th century B.C. found at Gordion. The fragments of two long-spouted pitchers and a bronze strainer, from the tumuli at Ankara, are proof that the Phrygians fashioned many vessels of metal similar in shape to those of terra cotta, many varieties of which were found in Tumulus III at Gordion. The umbilicated cups, which are widespread, and the ladles are domestic utensils which the Phrygians shared with neighboring peoples of other cultures. The handsome belt uncovered in Mausoleum I at Ankara, with its meander decoration and the magnificent openwork ornament of its buckle, bears the imprint of the mature Phrygian style, the so-called "fine style" of the pottery. A similar belt from Polatli, in poorer condition, is preserved in the Ankara Archaeological Museum, and another noteworthy example is in the Istanbul Archaeological Museum. The arch-shaped fibulas noted in the Phrygian strata of the Anatolian "hüyüka" and in the tumuli at Ankara and Gordion constitute another original Phrygian type created toward the end of the 8th century B.C. That the Phrygians were also masters in the field of bronze sculpture can be deduced from the remains of a large figure of a horse, excavated at Çankiri Kapi near Ankara.

Architecture and rock monuments. Though strata from the Phrygian period in many Anatolian *hüyüklük*s have been examined, very little is known of Phrygian architecture. The reason for this is that, with the exception of Alishar and Bogazköy, the excavators have neglected to remove the strata horizontally over a large area, limiting themselves to taking vertical sections. It is barely possible to get an idea of the kind of construction from the ruins of houses and walls uncovered at Alishar; more reliable data are expected from the American excavations at Gordion. The imposing gate of this city, dating from the end of the 8th century B.C., is a worthy representative of the most flourishing period of Phrygian architecture. The other buildings of the same period, such as the "burnt building" and the "polychrome house," also give evidence of a constructive and decorative quality that rivals the contemporary Greek architecture of Asia Minor. The 6th-century houses at Gordion had plans of a Greek type and wall paintings that adhered to the eastern-Greek style (PL. 366).

Rock monuments are a late development of Phrygian art. None have been found from the oldest Phrygian cultural centers, that is to say, those within the "fertile crescent" of the Halys; and the monuments discovered near Afyon Karahisar and Eskişehir cannot be dated before the 6th century B.C. The development of the art of rock cutting and of carving sculptured views in rock, which had flourished in the 2d millennium B.C. with the Hittites (in the area within which the Phrygian rock works are found), took place when the epicenter of Phrygian civilization had already shifted toward the west, around the Midas City, which was in close contact not only with the Greeks but also with the Carians and the Lycians. Thus these peoples, especially the Lycians, exercised a direct influence on the rock work of the Phrygians. Indeed, although no Lycian rock monuments earlier than the 6th century B.C. have come down to us, we are entitled to suppose that in the contact between the two cultures the active role was played by the Lycians rather than the Phrygians, since the basic features of Phrygian rock façades are derived from the system of architecture in wood, of which the characteristic examples are Lycian. (It is noteworthy also that the Phrygian rock monuments are found in the region of the steppes, while the Lycian ones are in the region of the great forests.) In addition, the Lycians used rock monuments as funerary monuments exclusively, whereas the Phrygians also adopted them as cult monuments, although they retained features that belonged to the funerary monuments without understanding their meaning.

Phrygian rock façades are of three types: flat-roofed buildings, buildings with pitched roofs, and buildings using the Greek orders. The majority belong to the second type; only the tomb at Büyük Arslan Tash (PL. 528) and the monument at Diliki Tash, with their façades lacking pediments, are of the first type, and they represent the oldest examples of such monuments. The funerary monument at Kalekapi and that at Kastamonu, both in Paphlagonia (the first dating from the 5th century B.C., the second from the 4th), are the oldest examples of the third type, and, in addition to the pediment, they have also a pair of columns that can be explained only as the influence of Greek art. The sculptured decoration is partly of Achaemenian inspiration and partly of Greek. The imposing tomb at Çukurca dates from the late Hellenistic period, while the Solon Tomb dates from the late Roman period and represents an extreme example of the third type. Whatever their origin and variety of types, the Phrygian rock monuments, especially the façades at Büyük Arslan Tash, Yazılıkaya, and Arslan Kaya, are imposing works, particularly noteworthy for the art of Asia Minor (PLs. 528, 532).

An important feature of Phrygian rock façades, which distinguished them from all the other contemporary rock monuments of Asia Minor, is the sculptured geometric decoration. Its chief elements are the rows of squares tangent to one another at the corners, and the meander, arranged in carpetlike fashion as on the monument at Yazılıkaya (PL. 532). They directly recall the ornamental style of the contemporary terra-cotta friezes and the painted vases of the "fine style."

The cult monuments are of two types, rock façades and

altars with steps (rock thrones). The distinction between cult monuments and funerary monuments is a simple one: those with a burial chamber or some similar room are funerary monuments, while those with niches for placing cult images are cult monuments. The most important cult monuments are those at Arslan Kaya, at Yazılıkaya (the "Midas Tomb"), at Bahşiş, and at Arezastis (the niche with Cybele; PL. 528). The oldest is the monument at Arslan Kaya, from the middle of the 6th century B.C., and the latest is that at Bahşiş, which may date from the 5th century B.C. (PL. 532).

The finest example of altars with steps is that found on the acropolis of the Midas City, which has the shape of a throne preceded by three steps and was destined for the seated status of Cybele. A similar monument, near Alaca Hüyük, on the highest point of the imposing fortress of Kalehisar, is the first example of its kind found outside the Midas City.

The practice of using rock monuments as tombs came late, since originally the dead were placed in tumuli, which seem to have been reserved for kings, princes, and their relatives. The Phrygian tumuli are distinguished from those of western Asia Minor by the absence of stone chambers, dromoi, and *krepides*, or socles. These came into use in the second half or even at the end of the 8th century B.C. and went out of style immediately after the middle of the 6th century, whereas the western tombs in the Mycenaean tradition survive throughout all periods until the Roman. The cella is recessed in the interior and contains a wooden chamber, as exemplified by the princely tomb discovered intact in the great tumulus at Gordion. The royal tombs of the 3d millennium B.C. provided its precedent.

Conclusions. Since the remains of Phrygian culture are found immediately above the burnt stratum that signals the end of the great Hittite empire, and since, according to Assyrian sources, the Mushki appeared on the Assyrian borders at the time of Tiglath-pileser I (1115-1093 B.C.), earlier scholars believed that the beginnings of Phrygian art could be placed as early as the 11th century B.C. However, more recent investigations have demonstrated that none of the material remains of the Phrygians can be dated earlier than the 8th century B.C.

The cultural history of the Phrygians can be summarized in four phases. The first phase (775-725 B.C.) included the foundation of the first small Phrygian principalities in central Anatolia, with particular development in the region east of the Halys; its chronological limits can be determined on the basis of the early Phrygian style of pottery, but there are no traces of inscriptions, no monumental sculpture, and no important cult or funerary monuments. The second phase (725-676 B.C.) covered the foundation of the Phrygian federal state with its center at Gordion and the period of its greatest flourishing in the reign of Midas. The chronological limits of this phase can be determined on the basis of the creations of the first period of the mature Phrygian style; monumental sculpture and important cult monuments were still lacking, but there were tumuli. In the third phase (676-585 B.C.) the kingdom fell with the Cimmerian invasion and Greek influence increased. The chronological limits of this phase are defined by the second and third periods of the mature Phrygian style; inscriptions appear, but monumental sculpture and cult monuments were still unknown. Beginning about 650 B.C., cremation came into use. In the fourth phase (585-500 B.C.) the most important center was located in the region of the Midas City, between Eskişehir and Afyon Karahisar; the art of writing spread, and sculpture and rock monuments flourished over a wide area. The pottery was either of Greek import or in the late Phrygian style.

LYCIA. Lycia has been identified with Luqqa ("Lukka Lands"), mentioned in Hittite texts from Bogazköy, and also with the Luku people mentioned in Egyptian texts from Tell el-Amarna. According to statements in Egyptian sources, the Lycians were allies of the Hittites at the time of Ramses II (1297-1230 B.C.). Hittite texts of the 14th and 13th centuries B.C. state that the Luqqa people inhabited the coast of Asia Minor. Herodotus states that the Lycians came from Crete and called themselves Termliae. Actually, we have no documents concern-

ing the civilization of the Lycians in the 2d millennium B.C., and the comparison of written sources with the archaeological material is even more unfavorable than in the case of Phrygia, since the oldest descriptions of Lycian culture and art that have come down to us hardly go back to the 6th century B.C. In contrast to Phrygia, pottery is completely lacking among the remains. Instead, there are funerary monuments with reliefs and other kinds of plastic decorations.

Architecture. Lycian funerary monuments are in the shape of a house or part of a house, mostly sculptured on the rock and placed on a pillar or base (PLs. 533, 534). The raised location of the tomb is to be attributed to the belief that the dead were carried to heaven by winged demons; this appears in the scene depicted on the northern side of the so-called "Harpy Tomb," which shows the "Harpies" stealing away the dead (PL. 537). Both the flat and the pitched roof were used. The flat-roofed tombs are usually supported by high pillars, varying in height from 10 to 20 ft. (PL. 533); examples in which they rest on a base resembling a ground floor constitute a Hellenized variant of this type of funerary monument. The pitched-roof tombs, also on a socle or base, have a variant with a curved pediment (PL. 534) and one with a triangular pediment. In general the space covered by the tympanum forms a kind of second story, and also in the tombs without a base the place for depositing the dead was elevated. (Evidence that the dead were placed in the highest part of the monument is present in a tomb at Hoyran, where the representation of the funeral banquet is placed on the entablature of the monument.) To the type of tomb with a gabled pediment also belongs the magnificent sarcophagus from Sidon correctly designated as Lycian, now in the Istanbul Archaeological Museum, which dates from the end of the 4th century and is the oldest example of a series of similarly shaped sarcophagi (PL. 535). The origin of the flat-roofed tombs goes back to local traditions of Asia Minor, but it is difficult to say whether the pitched-roof type is an original Lycian creation or a transformation of the proto-Greek type of house. The pitched-roof building and the gabled pediment already appear on the Phaistos disk but were also in use in Greece no later than the beginning of the 7th century B.C., as can be seen from the clay model of a house from Perachora.

Particularly characteristic of Lycia are stone structures built according to the methods used for wooden structures. The character of construction in wood appears in the imitation of wooden beams and roundels and in the central support of the pediment, which often rests on a base. The same center support occurs again in the Phrygian rock façades and appears in a sarcophagus from Klazomenai (now in the Istanbul Archaeol. Mus.) as a column with an Ionic capital; it appears also on the stele from Gela, in the Syracuse museum, as a small column topped with an Aeolian capital. A similar column is found in the center of the triangular space of the Lion Gate at Mycenae, and the motif reappears in the Phrygian funerary steles of the Roman period.

Furthermore, it is probable that the Greek funerary steles in the shape of *naiskoi* and the sarcophagi and votive steles with an architectural frame are related to the funerary monuments of Asia Minor.

In the course of the 5th century B.C., Lycian architecture gradually adopted Greek ornamental elements: in many monuments dentils took the place of roundels, and in the Xanthic stele with the large inscription, dating from the last quarter of the 5th century B.C., and the "pilaster sarcophagus" from Xanthos is found an application of the Lesbian cymation side by side with more properly Lycian motifs. The process of Hellenization continued in the 4th century B.C. to the extent that the rock tombs, originally in the shape of a house, now became mere façades — a form which had entered into use in Phrygia as early as the 6th century B.C. but which in Lycia could have originated only under the influence of the Greek steles. Two rock tombs at Limyra, dating from the end of the 4th century B.C., are of this type and are decorated with reliefs like their Greek models. Finally the imprint of Greek architecture

is decisively affirmed in the tombs of the Hellenistic period, with such elements as columns, antae, architraves, and pediments. However, a Hellenistic sarcophagus from Trysa, now in the Istanbul Archaeological Museum, preserves the shape of the older Lycian sarcophagus along with its Greek reliefs.

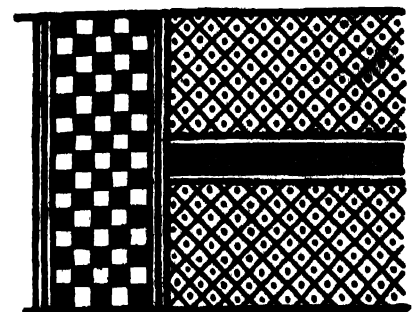
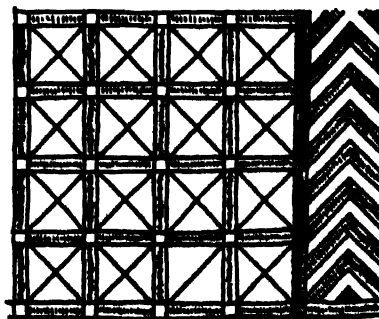
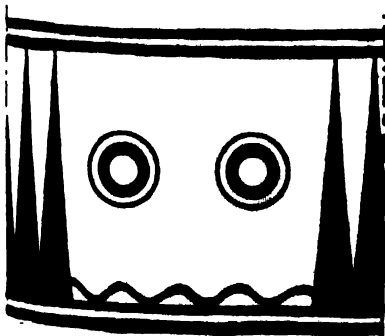
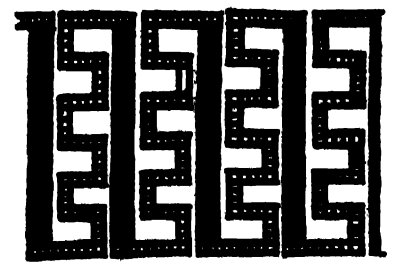
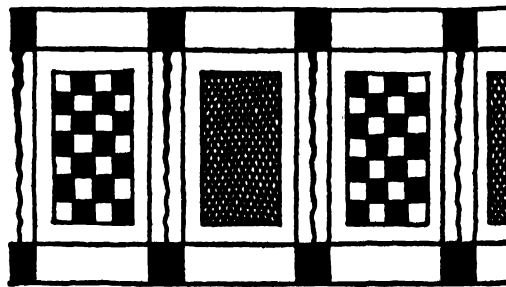
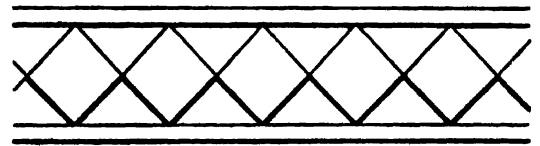
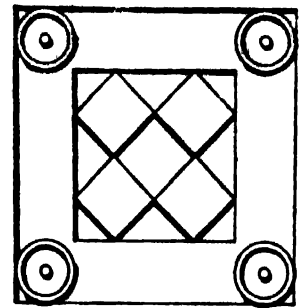
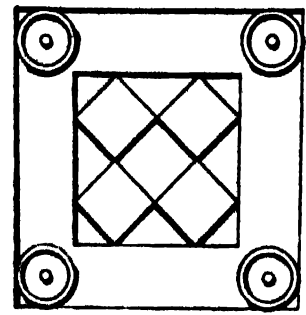
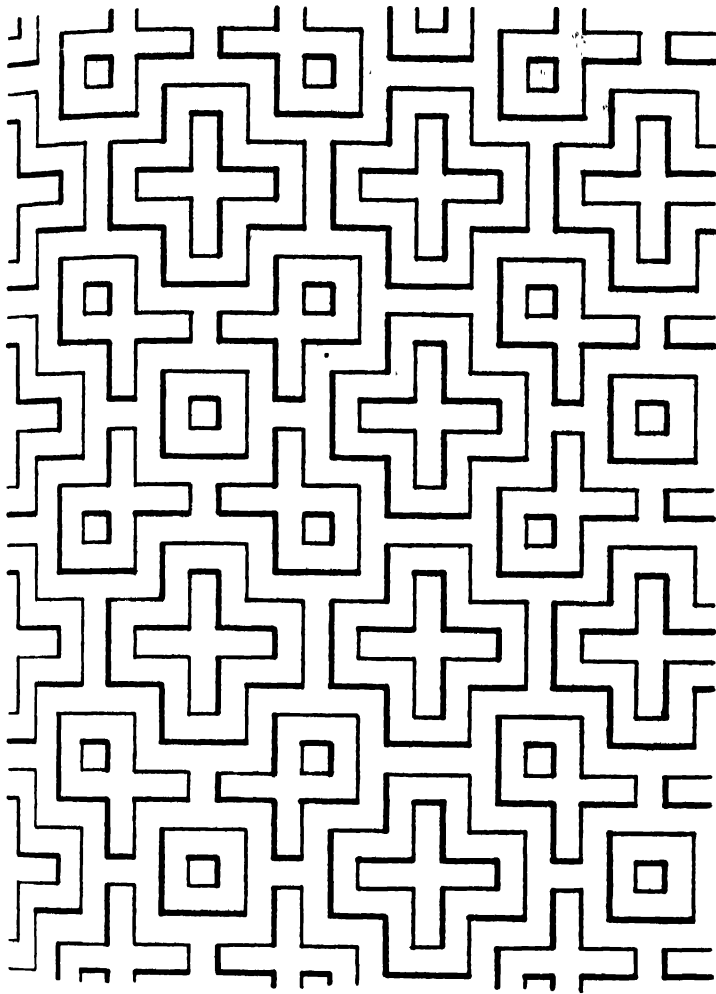
Sculpture. This consists essentially of funerary reliefs. The oldest examples, now in the British Museum, came from the so-called "Lion Tomb" at Xanthos and represent the heroic exploits of the prince buried in the tomb (PL. 536). On the western side the prince is fighting with a lion; on the eastern side he is turning away from the fight, holding his shield high as a sign of success; on the other two sides are sculptured the guardian lions of the tomb, and their scheme is repeated in the depiction of Theseus' fight with the Minotaur, based on Eastern models. Nevertheless the style of the monument bears a Greek imprint, of a very archaic variety, as is suggested by such details as the prince's head, with a "stepped" wig, and the shape of the horses, while other, more advanced features of the human and animal figures and some affinities with the design of the Caeretan hydrias lead one to date this sculpture about 540 B.C.

The next oldest reliefs come from a pillar tomb at Isinda (Belenkli), now in the Istanbul Archaeological Museum. These also illustrate the heroic exploits of the prince buried in the tomb, who is depicted once with the captured arms and the vanquished enemy and again hunting (western, southern, and eastern sides), while on the northern side are depicted funeral games accompanied by music. In comparison to the reliefs on the Lion Tomb, the exuberant figures on the tomb at Isinda bear a clear Ionian imprint, although the combatants wear Corinthian rather than Ionian helmets. On the basis of these considerations, it can be dated about 525 B.C. Similar reliefs, contemporary but of a superior quality, have been uncovered recently at Xanthos and are today in the Istanbul Archaeological Museum (PL. 536).

The reliefs on the Harpy Tomb (PL. 372), some of the most beautiful that have come down to us, depict the adoration of the heroized dead: two women and a man seated on thrones flanked by adoring relatives. On its northern and southern sides is depicted the carrying off of the souls by the "Harpies" (PL. 537). The figures of the relatives are not smaller than the dead, as in Spartan funerary reliefs of the 6th century B.C.; thus, for the first time in the sepulchral sculpture of the Greek and Greco-Eastern area, the heads are at the same level as the heads of the persons on the throne; this represents important progress from the heroic reliefs toward the depiction of human groups in the manner of the Attic reliefs of the end of the 5th century B.C. The exuberant shapes of the Harpy Tomb follow the Milesian Ionic style in all respects; the native artist seems to have been educated in the Greek school, and he closely follows its style. The rich folds of the clothes and the other graceful features also suggest the archaic style, though the reliefs evidently were executed about 480 B.C.

The relief on the pediment (Br. Mus., B 289), with the siren on a column placed between two male figures facing one another, continues the Milesian Ionic style of the Harpy Tomb, but, as is shown by the draping in the style of Olympian sculptures, it is to be dated at about 460 B.C. The sphinxes on another pediment relief (PL. 537) in the British Museum have archaic profiles but are certainly from the early classic period, from about 460 B.C.; and contemporary with these reliefs is the decorative frieze at Xanthos, with such animals as lions, panthers, and cocks and hens.

A Xanthic frieze in the British Museum with representations of chariots and horsemen, for the first time reveals Persian influence, especially in the mane and the way the tail is tied at the end and the covering placed on the backs of the horses, as well as in the hair and beard of the old man seated in the chariot. At first sight the profile and hair of the boy with the horse (PL. 538) recall the sculptures at Olympia, but the horseman who follows the chariot sits in a way that is typical of the horsemen of the Parthenon frieze; consequently, this relief could have been executed only after the middle of



Phrygian decorative motifs. *Above:* Reliefs from rock monuments. *Below:* Painted designs from pottery.

the 5th century. The frieze of the men at Xanthos, also in the British Museum (B 314), also clearly follows the style of the sculptures of the Parthenon and is approximately contemporary with the previous one. From now on it is difficult to distinguish native from Greek elements in these sculptures.

The excavations at Xanthos have brought to light the remains of a stele which can be dated, on the basis of its inscriptions, from the last quarter of the 5th century B.C.; in the fragments of its relief, now in the Istanbul Archaeological Museum, is repeated the old Lycian theme of the dead with the arms of the vanquished enemy. The series of Lycian funerary monuments is continued in the last quarter of the 5th century by three imposing works: the so-called "Nereid Monument," the Heroön of Trysa (Gölbasi), and the already-mentioned sarcophagus from Sidon.

The Nereid Monument, the tomb of a local prince, is a typical example of an old Lycian sepulchral monument transformed in a Greek sense: it has the shape of a small Ionian temple, but, in accordance with tradition, it is placed on a high base (PL. 539) and is decorated with rich ornamental sculptures. The frieze on the base glorifies the exploits of the prince: hoplites fight among themselves and with men dressed in Persian costume around a fortress whose surrender is accepted by the prince as a satrap. On the frieze of the epistyle are depicted the offerings of tribute, the hunt, and other combats; on the frieze of the cella appear the funeral sacrifice and the funeral itself with the banquet and musicians. On the front pediment the prince and his wife are seated on a throne, while on the other pediment are hoplites and horsemen. The themes are chiefly based on Greek models, but the detailed narration and description reveal the influence of Eastern art passed on to the Lycians by the Persians. The Nereid Monument is the oldest tomb on which mythological scenes are depicted. In spite of strong Attic influences, the style of the relief is Greco-Eastern. The hypothesis has been rightly advanced that this monument is the work of two sculptors, one of whom had a sense of space and a knowledge of perspective, while the second replaced depth by gradation. The first, more advanced, resembles works in the Greek style; the second is under the influence of Eastern artistic conceptions; both apparently were acquainted with the frieze on the Parthenon. In the great frieze on the base there are unmistakable references to the battle scenes at Phigalia and of the small temple of Athena Nike, by which one can presume that the monument is a work of the last quarter of the 5th century B.C.

Like the other Lycian sepulchral monuments, the Heroön of Trysa is built in the shape of a house, but it is surrounded by a peribolos of an irregular square shape. The entrance sides, which are located on the south, and the four inside walls were decorated with lavish reliefs, now preserved in the Kunsthistorisches Museum in Vienna. On the outside lintel of the door were depicted winged protomas of bulls, and underneath were seated men and women, while on the inside were figures of Bes playing musical instruments and dancing. On the southern side of the outside wall and on the inside walls were illustrated such subjects as the Seven against Thebes, the exploits of Theseus, Odysseus slaying the suitors, Meleager's boar hunt, the battle of the Amazons and centaurs, and the rape of the daughters of Leucippus. In contrast, scenes of the landing, the battle in the fields, the siege of cities, the hunt, the banquet, and the worship of the dead, and the images of the prince on the quadriga and of his grandfather Bellerophon reproduce subjects that have a more direct connection with the master of the tomb and should be considered as glorifying his exploits. As in the Nereid Monument, the style is still Greco-Eastern, but with unmistakable references to contemporary Attic prototypes. The Heroön of Trysa, a somewhat provincial work, is possibly of more recent date than the Nereid Monument, which in some ways might have served its designer as a model.

The remarkable skill of Lycian sculptors is revealed by the house-shaped sarcophagus found at Sidon (PL. 535). Fine and accurate carving that suggests a courtly art, boar hunts on horseback and lion hunts on chariots are depicted on the longer sides, battles with centaurs on the shorter sides, and sphinxes

and griffins on the pediments. Side by side with local tradition, Attic influences are also recognizable, suggesting that the monument dates from about 400 B.C.

Although Lycian art survived into the 4th century B.C., no noteworthy works were produced. There remain chiefly reliefs executed in a provincial style, notably the reliefs of the "Payava Monument" at Xanthos, now in the British Museum. The sphinxes and the figures of seated men and women on the pediment repeat the motifs of the Lycian monuments of the 5th century B.C. The battling groups on the eastern side and the figures of chariots on the roof were inspired by Greek prototypes of the 4th century. On the long western side is depicted the Persian satrap Autophrades, who ruled from about 375 to 362 B.C. There is also a series of reliefs on a tomb at Hoyran: on the pediment are depicted three standing persons; of the corner acroteriums, on which there were reliefs of sphinxes, only the left one is preserved; on the frieze under the pediment is a funeral banquet scene, with a man on a bed in the center, eight standing persons on the right, and a table with a vase and four armed men on the left. The reliefs on two tombs at Limyra show clear influence of Attic steles of the 4th century. On one of these, at the right and left of the gate of the tomb, is portrayed the family of the owner of the tomb, on one side the father and three sons, on the other the mother and daughter. On the other tomb, on the left is a man with one hand outstretched and on the right a woman giving a cracker to a child. Later Lycian sculpture loses its native characteristics, the traditions of Asia Minor being replaced by the provincial sculpture of the Roman period, such as the so-called "Reliefs of the Twelve Caves," with divinities on the backs of animals.

LYDIA. In the 7th and 6th centuries B.C., Lydia played a leading historical and cultural role in Asia Minor. It is worthy of note that Homer did not know of the Lydians but referred to their country by the name of Maeonia. Probably the Maeonian and Lydian tribes belonged to the same group, the Maeonians prevailing in the beginning and the Lydians gaining the upper hand later, perhaps only at the end of the 8th century. The dynasties of the Atyadae and the Heraclidae are wrapped in legend, and the names of the kings Sadyattes and Alyattes seem to go back to Hittite forms. In contrast, the dynasty of the Mermnadae, starting with Gyges (ca. 687-652 B.C.) and ending with Croesus (ca. 560-546 B.C.), is completely historical, as Assyrian and Greek sources testify, and had its center at Sardis. The civilization of the Lydians was in close contact with the Greeks of Asia Minor in the archaic period and was famous in classical times for having invented coinage and for manufacturing luxury articles.

Pottery. The type of vase known as a "lydion" (a small globular jar with a high stem; FIG. 885) was designed specifically for the export of Lydian salve. A long-spouted vase from the beginning of the 6th century B.C. shows Phrygian influence, but the shape of the base proves it is a Lydian product. As a rule, Lydian potters imitated, with occasional modifications, the shapes of Greek vases, although the decoration also shows local peculiarities. Yellow, white, or orange slip is common. Wavy lines and imitations of marble and glass objects are typical decorative motifs. Painting with polychrome — red, gray, and sometimes white bands — which occurs on vases of various shapes but especially on the skyphoi, represented at Sardis about 600 B.C. and in the first half of the 6th century by elegant examples and also found in the excavations at Bayrakli near İzmir (Smyrna) and at Daskyleion, was also widespread. The latest products of this kind of pottery, from the tombs of the second half of the 6th century B.C., are, in contrast, of a poorer quality: evidently Lydian vase painting came to a halt in the period following the death of Croesus. The local figurative vases are completely under the influence of Greek art. This is the case, for example, in the fragments of vases with horsemen preserved in the Metropolitan Museum in New York, whose ornament is inspired by the sub-Geometric style, while the figures follow eastern-Greek models of the third

quarter of the 7th century B.C.; however, local features show themselves in the yellowish slip, in the large double-lined contours, and in the exaggerated color effects.

Architecture. We know nothing at all of the famous royal palace (τὰ τῶν Λυδῶν βασιλεία) of Croesus, not even where it was located. It is probable that the Lydians had a monumental civil and religious architecture, though Herodotus tells us that the Lydian homes were made chiefly of reeds and that even those made of bricks had reed roofs. On the other hand, the burial chambers of the tumuli of the 6th century B.C. bear witness to their knowledge of advanced architectural techniques. The structure which archaeologists call the "Lydian Building," on the western side of the Temple of Artemis at Sardis, may have been an altar. Rock monuments, either funerary or cult, which were in use in Phrygia and Lycia, apparently were not used in Lydia. When the Phrygians, under the influence of the Lycians, were already burying their princes in rock tombs, the Lydian royal family was being buried in tumuli. However, Lydian tumuli are basically different from Phrygian examples: they had complete stone chambers with a dromos and sometimes a *krepis* and therefore, like the tumuli of Caria, go back rather to the tradition of the Mycenaean tholoi. As in the archaic Greek tumuli at Smyrna, there is a phallic symbol on the top. But they are distinguished from their Aegean models and from the Greek tumuli of western Asia Minor by their colossal dimensions: the diameter of the tomb of Alyattes exceeds 1,000 ft. and has a circumference of 3,500 ft. and a height of over 200 ft., whereas the largest Phrygian tumulus has a diameter of about 400 ft.

Metalwork and jewelry. We know nothing at all of the Lydian art objects made of precious metals which were so famous in ancient times. However, the splendor of Lydian work in this field is affirmed by the votive gifts mentioned in Herodotus (I, 50 ff.) which Croesus offered to the god of the oracles at Delphi. Genuine marvels were involved: the image of a gold lion weighing 11 pounds, craters of unusual size (one of gold, the other of silver), round silver pitchers, a gold picture of a woman, and others. The jewelry uncovered in the excavations at Sardis, now in the Istanbul Archaeological Museum, does not give us the slightest idea of this art (PL. 540). The gold plates with figures of male and female sphinxes, as well as the conical seal with a silver handle, are Achaemenian. The gold earrings undoubtedly show, in the details of the lion heads, some Assyrian features. But not all the Assyrian or late-Hittite features of these masterpieces can be reduced to direct Eastern influence. The Greek jewelry of the 7th and 6th centuries B.C. was also inspired by late-Hittite and Assyrian art; consequently, Lydian jewelry may have received its Orientalizing features through the intermediary of Greek models rather than through direct contact with the East. The three miniature gold lions with their heads arranged frontally (Istanbul Archaeol. Mus.) are of the same type as the Milesian-Ionic lions.

Coinage. The minting of coins began in Lydia as early as the 7th century B.C. However, coins with figurative representations seem to have come into fashion only about 600 B.C. Among the most beautiful are those with lions' heads or heads of lions and bulls (PL. 540). These lions' heads, which are exactly like the representations of lions of the contemporary Greek cities of Asia Minor, present Assyrian and late-Hittite features. In this case also it can be assumed that there was a development of figurative types in paralleling eastern-Greek coinage, without any direct Eastern influence.

Sculpture. The fact that Croesus had dedicated sculptured columns with reliefs in the Temple of Artemis at Ephesus, as is stated on the dedicatory inscription, shows at least that the Lydians were greatly interested in sculpture, and it can be presumed that the king's palace also was adorned with sculpture. The only remains of Lydian plastic art of the 6th century B.C. are two reliefs with horsemen and three grazing deer, from a tumulus at Bin Tepe, which are rather modest and

decorative (PL. 541). The architectonic terra-cotta friezes found at Sardis (PL. 541) go back to eastern-Greek models of the Aeolian region already mentioned in connection with similar Phrygian works. Also noteworthy are slabs with the group of Theseus and the Minotaur and the *Potnia Theron* (the "Lady of the Beasts") from the beginning of the 6th century B.C. and a slab in the Bibliothèque Nationale in Paris with figures of chariots, executed around 530-520 B.C. probably on Iranian order (since the shape of the chariots shows signs of Achaemenian influence).

On the whole, Lydia before the Persian conquest was oriented toward the West and was influenced by Greek culture.

CARIA. In spite of the excavations made in their territory, we know very little about the art of the Carians. Even ancient sources are few and uncertain. Herodotus tells us that according to Cretan tradition the Carians were called "Leleges" and that in Minoan times they had lived in the Aegean, but local tradition placed them instead in Anatolia and made them kinsmen of the Lydians and Mysians. It is possible that, as with the people of Lycia and Lydia, the Leleges and the Carians were two different tribes of a single people, which flourished in successive periods. In archaic times their relations with the Greeks were close from the time when Carian and Greek mercenaries flocked to Egypt in the service of Psamtik I (663-609 B.C.) or Psamtik II (593-588 B.C.), and these did not stop at the time of Persian domination, as is indicated by the decoration of the sepulchral monument of the prince and satrap Mausolus at Halicarnassus, which was commissioned from the greatest Greek sculptors of the middle of the 4th century B.C.

Pottery. A vase found in a tomb near Idrias can be designated as a Carian variant of the eastern Greek sub-Geometric style: the decoration, which consists of T-shaped designs or latticework motifs, goes back to Greek models of the second quarter of the 7th century, while the poorly defined figure of an animal is clearly a provincial and primitive reproduction of the Greek rendering of animals. On the other hand, the design of the lower part of the belly and the shape of the vessel as a whole recall the influence of Phrygian vase painting. The fragments of pithoi and of sarcophagi with meander and zigzag motifs, from the tumuli at Asarlik, may go back to the first half of the 7th and in part even to the 8th century B.C. The tumuli at Asarlik have also yielded proto-Geometric pottery, but apparently not Carian.

Architecture. The Carian tumuli, like the Lydian ones, are furnished with stone chambers, a dromos, and a *krepis* along the inside circumference of the tumulus. The shape of the stone chamber is closer to that of the tombs with a cupola of the Mycenaean tholos type than are the Lydian tumuli, and this indicates that they are somewhat earlier. Tumuli similar to those at Asarlik and dating from the late Geometric or archaic period have also appeared at Gökceler, north of Halicarnassus. In contrast to the Lydians, the Carians used cremation.

Rock tombs have also been found in Caria, but only examples of the type which follows the Greek order of architecture. The tomb at Idyma, on the Lycian-Carian border, is almost identical with the contemporary Lycian tomb at Amynta. A rock tomb at Kyra, also on the Lycian-Carian border, is an example of Doric and Ionian mixed order of the late Hellenistic period. Another rock tomb, somewhat simpler, is found near Milas. There are also examples of the type of funerary monument without a base. The Mausoleum of Halicarnassus, some 165 ft. high, was not only one of the most famous monuments of the ancient world but also the greatest example of a sepulchral monument in the Lycian tradition. The tomb at Gülmüş Kesen, dating from the end of the 1st century B.C., is a smaller copy of the Mausoleum but without sculptured ornament (PL. 542). Also, the burial chamber is placed at the lower level, in direct contact with the ground, so that it appears to be of Greek rather than Lycian type. Equally contrary to Lycian tradition is the heavy pyramidal entablature which presumably also existed in the Mausoleum. Other sturdy buildings,

constructed according to Greek orders of architecture but with local features, are preserved at Labraunda, the most important being the structures characterized by entrance halls and *oikoi*, with squared apses and low windows.

Sculpture. It is doubtful whether there was a Carian tradition of sculpture, such as that which flourished in Lycia. In the İzmir museum a series of archaic terra cottas of Carian origin are preserved, but, like the marble head found at Kermos, from the middle of the 6th century (in the same museum), they are direct evidence of archaic eastern-Greek sculpture and have nothing to do with Carian art. The sculpture of the Mausoleum, as we have seen, is completely Greek, though it was adapted to certain local artistic needs, for example, in the portrait statue of Mausolus and in the male sphinx placed as an acroterium on the southern anta of entrance hall B, which goes back to preclassical iconographic traditions.

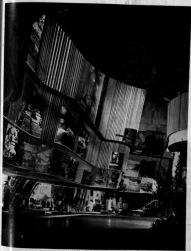
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Ekrem AKURGAL

Illustrations: FLS. 527-542; 3 figs. in text.

PLATES



W. L. Lawrence, Portland Pavilion, (New York World's Fair, 1958)



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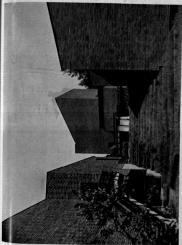
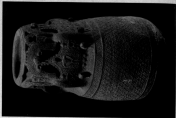


Fig. 1. Mechanical equipment. (continued)



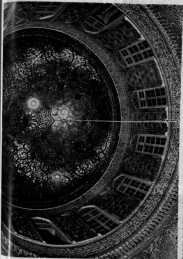


Figure 1. A circular, ornate object, possibly a clock face or a decorative panel, featuring intricate carvings and a central circular motif.

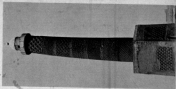




Fig. 1. Relief of Karnak, Egypt, showing the seated figure of the goddess Hathor, with hieroglyphs and other symbolic elements.



FIG. 2. Small, round, dark-colored seed or fruit, showing internal structure.



Fig. 1. Large, ornate ceramic jar or vase, decorated with stylized figures and symbols. From the collection of the British Museum, London. (Reproduced by permission of the Trustees of the British Museum.)



Pl. 66 Bowl from Hanks, Texas, 18th cent. White ware with decorations in black and translucent green glaze. H., 17 1/2 in. (44 cm.) in Washington, D.C., from Collection of Art.

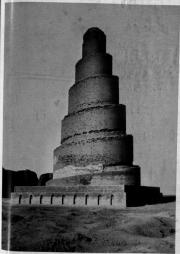


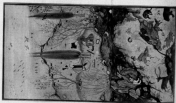
Fig. 10. — *Stupa*. — *al-Makdasat*, "great obelisk" with circular apertures (the same, fig. 10, p. 10).



PL. 62. *Delhi*—Bahau-ud-Din Dargah. Bahau-ud-Din Dargah, Delhi, India. (The Dargah is the site of the Khawaja Bahau-ud-Din Dargah.)



Fig. 1. Interior of the Khan Karim, reconstructed, 1910-1911.

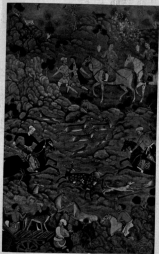




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25. 14. 'NINE 'N NAMA' (The Father's Ministry). Tehran, Imperial Library of Shiraz.



PL. 27. Blowing snow. Minnesota, St. Louis, England, (Dana Roberts Coll.)



16, 17. Roman ruins in Algeria. Above: Temple of the Christian women. 16, 17 to, above, 18 to, below: Roman Forum at Timgad.



Fig. 10. Side of a plaque of Koro, Ekwerre, Upper Volta of Volta, Limestone. Both from, Musée de l'Homme.



PL. 36. *Osiris, Temple, Philae, Egypt.*



Fig. 1. Relief from the Sebasteion at Aphrodisias, Tralles.



18. 19. *Shabonawa people, armed with spears in an amphitheater, from the Pits of Jebel Akkarat (see above, p. 107). 19th cent. 64-74 A. D., Egypt, Archaeological Museum.*



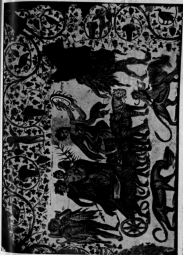


Fig. 1. Mosaic of the Villa of the Papyri, Herculaneum. (After the original in the Villa of the Papyri, Herculaneum.)





Fig. 1. Mosaic from the church of the Holy Sepulchre, Jerusalem, showing the Adoration of the Kings. (After the original in the Vatican Museums.)



PL 25. *Peleliu*—scene with images of Hapman and Angphoria. Peleliu, Caroline.



Fig. 1. Mirror with representations of various goddesses. From early Christian, Monte Mario.



¹⁰⁹ [8] Windows.org; Mike Ponder, Microsoft, E. Sunnyvale, Calif.

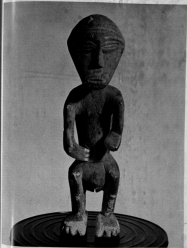
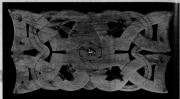


Fig. 10. Sculpture by the French artist, Wally Pfister, 1970s. Beginning of 1980s.



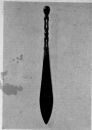
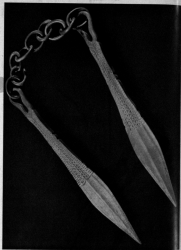


FIG. 10. Art of Black Egyptians. Above: Front mirror and clasp of headdress. Below: Clasp from headband. Head, 20 in. (London, B. M.)



¹ H. H. Goss, *English Seed-Plants and their Uses*, Macmillan Company, N.Y., N.Y., 1910, pp. 1-12, 130-131, 132-133, 134-135, 136-137, 138-139, 140-141, 142-143, 144-145, 146-147, 148-149, 150-151, 152-153, 154-155, 156-157, 158-159, 160-161, 162-163, 164-165, 166-167, 168-169, 170-171, 172-173, 174-175, 176-177, 178-179, 180-181, 182-183, 184-185, 186-187, 188-189, 190-191, 192-193, 194-195, 196-197, 198-199, 200-201, 202-203, 204-205, 206-207, 208-209, 210-211, 212-213, 214-215, 216-217, 218-219, 220-221, 222-223, 224-225, 226-227, 228-229, 230-231, 232-233, 234-235, 236-237, 238-239, 240-241, 242-243, 244-245, 246-247, 248-249, 250-251, 252-253, 254-255, 256-257, 258-259, 260-261, 262-263, 264-265, 266-267, 268-269, 270-271, 272-273, 274-275, 276-277, 278-279, 280-281, 282-283, 284-285, 286-287, 288-289, 290-291, 292-293, 294-295, 296-297, 298-299, 300-301, 302-303, 304-305, 306-307, 308-309, 310-311, 312-313, 314-315, 316-317, 318-319, 320-321, 322-323, 324-325, 326-327, 328-329, 330-331, 332-333, 334-335, 336-337, 338-339, 340-341, 342-343, 344-345, 346-347, 348-349, 350-351, 352-353, 354-355, 356-357, 358-359, 360-361, 362-363, 364-365, 366-367, 368-369, 370-371, 372-373, 374-375, 376-377, 378-379, 380-381, 382-383, 384-385, 386-387, 388-389, 390-391, 392-393, 394-395, 396-397, 398-399, 400-401, 402-403, 404-405, 406-407, 408-409, 410-411, 412-413, 414-415, 416-417, 418-419, 420-421, 422-423, 424-425, 426-427, 428-429, 430-431, 432-433, 434-435, 436-437, 438-439, 440-441, 442-443, 444-445, 446-447, 448-449, 450-451, 452-453, 454-455, 456-457, 458-459, 460-461, 462-463, 464-465, 466-467, 468-469, 470-471, 472-473, 474-475, 476-477, 478-479, 480-481, 482-483, 484-485, 486-487, 488-489, 490-491, 492-493, 494-495, 496-497, 498-499, 500-501, 502-503, 504-505, 506-507, 508-509, 510-511, 512-513, 514-515, 516-517, 518-519, 520-521, 522-523, 524-525, 526-527, 528-529, 530-531, 532-533, 534-535, 536-537, 538-539, 540-541, 542-543, 544-545, 546-547, 548-549, 550-551, 552-553, 554-555, 556-557, 558-559, 560-561, 562-563, 564-565, 566-567, 568-569, 570-571, 572-573, 574-575, 576-577, 578-579, 580-581, 582-583, 584-585, 586-587, 588-589, 590-591, 592-593, 594-595, 596-597, 598-599, 600-601, 602-603, 604-605, 606-607, 608-609, 610-611, 612-613, 614-615, 616-617, 618-619, 620-621, 622-623, 624-625, 626-627, 628-629, 630-631, 632-633, 634-635, 636-637, 638-639, 640-641, 642-643, 644-645, 646-647, 648-649, 650-651, 652-653, 654-655, 656-657, 658-659, 660-661, 662-663, 664-665, 666-667, 668-669, 670-671, 672-673, 674-675, 676-677, 678-679, 680-681, 682-683, 684-685, 686-687, 688-689, 690-691, 692-693, 694-695, 696-697, 698-699, 700-701, 702-703, 704-705, 706-707, 708-709, 710-711, 712-713, 714-715, 716-717, 718-719, 720-721, 722-723, 724-725, 726-727, 728-729, 730-731, 732-733, 734-735, 736-737, 738-739, 740-741, 742-743, 744-745, 746-747, 748-749, 750-751, 752-753, 754-755, 756-757, 758-759, 760-761, 762-763, 764-765, 766-767, 768-769, 770-771, 772-773, 774-775, 776-777, 778-779, 780-781, 782-783, 784-785, 786-787, 788-789, 790-791, 792-793, 794-795, 796-797, 798-799, 800-801, 802-803, 804-805, 806-807, 808-809, 810-811, 812-813, 814-815, 816-817, 818-819, 820-821, 822-823, 824-825, 826-827, 828-829, 830-831, 832-833, 834-835, 836-837, 838-839, 840-841, 842-843, 844-845, 846-847, 848-849, 850-851, 852-853, 854-855, 856-857, 858-859, 860-861, 862-863, 864-865, 866-867, 868-869, 870-871, 872-873, 874-875, 876-877, 878-879, 880-881, 882-883, 884-885, 886-887, 888-889, 890-891, 892-893, 894-895, 896-897, 898-899, 900-901, 902-903, 904-905, 906-907, 908-909, 910-911, 912-913, 914-915, 916-917, 918-919, 920-921, 922-923, 924-925, 926-927, 928-929, 930-931, 932-933, 934-935, 936-937, 938-939, 940-941, 942-943, 944-945, 946-947, 948-949, 950-951, 952-953, 954-955, 956-957, 958-959, 960-961, 962-963, 964-965, 966-967, 968-969, 970-971, 972-973, 974-975, 976-977, 978-979, 980-981, 982-983, 984-985, 986-987, 988-989, 990-991, 992-993, 994-995, 996-997, 998-999, 1000-1001, 1002-1003, 1004-1005, 1006-1007, 1008-1009, 1010-1011, 1012-1013, 1014-1015, 1016-1017, 1018-1019, 1020-1021, 1022-



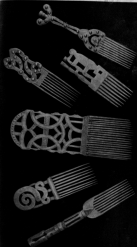


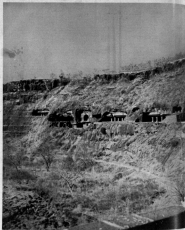
Fig. 1. Robert Rauschenberg, *Seven Elements*, 1970. 1. 1. and 1. 2. Rauschenberg 1970



18. 19. *Scene out of the Harlem ghetto. Wall paintings in Harlem ghetto. Wall: John (left), Elmer (right). Harlem, N.Y., 1968.*



Fig. 1. *Wooden mask, No. 17-18, from Agadez, Niger, Senegal, No. 18, 19, 20, and 21, Senegal, No. 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.*



Pl. 6. Partial view of the ruins of Agosty, India.





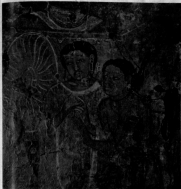


Fig. 2. Chinese Student Exports from Hall of Palace Museum, detail, 1991.





Fig. 45. Fossil wood (Lara 1970).



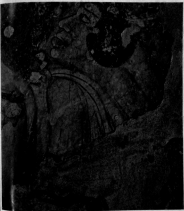
Fig. 46. Richard Serra, *Stacks*, 1981. Steel, 10' x 10' x 10'.



Fig. 1. The rock formation, 100 cm.



PL. 16. (Horn, left) Detail of a woman's face; (right) Woman wearing a headband and beaded necklace; (Horn, right) Woman wearing a headband and beaded necklace; (Horn, right) Woman wearing a headband and beaded necklace.





Pl. 16. Florence, Baptist Chapel of the Holy Sepulchre.



Fig. 16. Rimini, Tempio Malatestiano, entrance.



Pl. 51. Rimini, Temple Malatestiano: detail, above Piazza and left side, (center) detail of the right side, Rimini: detail of the right side of the facade: right, detail (Model by Matteo di' Persi 1488) reproducing Alberti's design for the Temple Malatestiano: Rimini: detail of a pilaster and of the base of the facade.



Fig. 1. Palazzo S. Maria Novella, complete view and two details of the facade.



81. 14. Florence, Palazzo Vecchio, a window of the second floor





PL. 36. Mantua. S. Andrea. Interior. Chapel and left side. Below left: Detail of the chapel doorway with floor of 1440. Right: Detail of the interior.



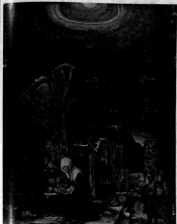


Fig. 16. Above: Church of San Andrea, the dome. Below: left: Church of San Andrea, the dome and interior of the dome. Right: Church of San Andrea, the dome.





Pl. 46. Descent into Egypt (Left) Panel 171-172 by Pieter Bruegel the Elder, Northern Mannerism.



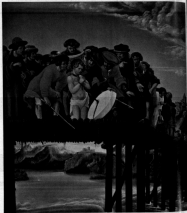
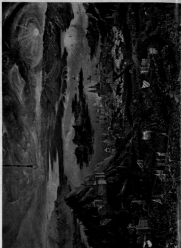
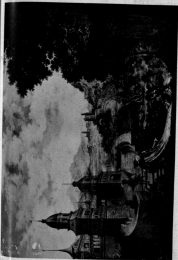


FIG. 42. *The Winter Sea in Mordvinia*, part of the illustrated display of the Russian Period, 18-20 in Moscow, 1924.







St. John's Church and Cemetery, Chapel, St. John's in Berlin, Transylvania, Romania



Pl. 11. Landscape with Fir Tree. Standing in misty water surrounded with white. (Water, *Hydrochloric acid*).





15. 16. Martyrs, death of the Crucifixion, Roman Prison, Basilica of St. Anicetus, Chapel of St. Peter



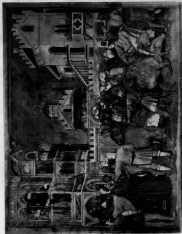




Fig. 10. Illustration of the Virgin surrounded by members of the Carthusian Order, from the *Book of Hours*, 15th century, folio 10v, Bibliothèque de la Ville de Paris, Paris, France. (Reproduced by permission of the Bibliothèque de la Ville de Paris, Paris, France.)

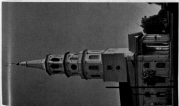


PL. 33. *Arango*, detail of the Funeral of St. James, *Prado, Owners of R. G. G. G.*



11.18. (Lower) Palazzo of Anagni (14), detail of the scene of the Destruction of the Walls (Anagni, 1327). Illustration of the story of the fall of the city, showing the destruction of the walls.





St. Michael's Church, Baltimore, Md. (left); Baltimore Trust Building, Baltimore, Md. (right)



PL. 55. *Exterior view of the building, shown in the sketch, showing the tower, Newport, R.I., 1912-13. (Note the tower, showing the tower, Newport, R.I., 1912.)*



51. Top: *Capen's country house, above: Mount Airy, Richmond Co., Va., 1784-85; below: left: Dr. Philip's house, Port Deposit, N.B., 1784-85; right: Woodford, Philadelphia, 1784.*



Pl. 16. Epitaphiosagion, also capital, Henry C. Johnson, Virginia State Capitol, Richmond, 1780-81; Robert C. Maury, Massachusetts State House, Boston, 1780-81.



Fig. 10. Early classical-revivalist government buildings: above, U. S. Capitol, D. C. (architects, W. B. Loring, H. W. Lusk, C. H. Smith, and T. H. Nelson, 1853-55); below, Treasury Department Building, Washington, D.C. (architects, H. H. Hild and J. H. Hild, 1862-63).



FIG. 61. The South wing and Rotunda, University of Virginia, Charlottesville, Va., 1800. (Below left: J. Rogers, *Enslaved House*, Boston, 1880-81. Right: W. H. Holladay, *Washington*, Philadelphia, 1822-23.)



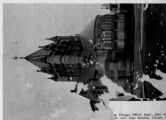
Fig. 1. Cathedral of the Assumption, Baltimore, 1846. (From the collection of the National Academy of Design, New York, 1846.)



Pl. 21. Above, left, W. L. Lupton, Trinity Church, New York, 1886; right, W. L. Lupton, Union Building, New York, 1886. Below, left, W. L. Lupton, Union Building, New York, 1886. Right, W. L. Lupton, Union Building, New York, 1886. (Reproduced by permission of the artist.)



[5] H. B. Matsumoto, *Matrix Algebra: Concepts, Examples and Tools*, Prentice-Hall, 1984.80. Editor: John Wiley & Sons, New York, 1984.80.



St. Thomas, 1910, by John A. ...
St. John's, 1910, by John A. ...



1. *Journal of the American Medical Association*, 1997; 277: 1039-1043.



1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

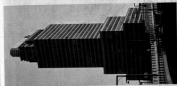
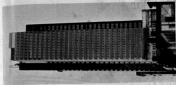


Fig. 14. Study of skyscraper. Above: City of Chicago & Dept. of Public Works, 1930. Below: City of Chicago & Dept. of Public Works, 1930. Below: City of Chicago & Dept. of Public Works, 1930.



Fig. 10. Seagram Building, New York City, New York, 1954-55.





1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.



FIG. 10. Early work of F. L. Wright, Cherry Cottage for Misses Helen and Mary Wright, Oak Park, Ill., 1899, 1900. Center, 1900; North, 1900; East, 1900; West, 1900; South, 1900; North, 1900; East, 1900; West, 1900; South, 1900.



Fig. 1. F. L. Wright. Above: Kaufmann House, Falling Water, Pa., 1936. Below: Glass Church, Oak Park, Ill., 1926.



16. 18. *Author's House at Graceland, Memphis, Tenn., 1900-01. (Left) 19. 20. *Author's House at Graceland, Memphis, Tenn., 1900-01. (Right) 21. *Author's House at Graceland, Memphis, Tenn., 1900-01.***



19. H. G. J. van den Broek, *Acta Math. Sci.*, 1991, 11, 1, 1-10; *Chinese Sci. Bull.*, 1991, 36, 1, 1-10.

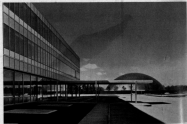


Fig. 16. J. J. O'Connell, General Motors Technical Institute, Warren, Mich., 1955-56. Architectural drawings: Robert Sterling Griffiths and Associates.



Pl. 16. American cultural paintings. Above, left: Elizabeth (Katie) Smith and Douglas, 1871, by John Cassatt (1817-1892). Museum of Art, San Francisco, gift from the artist. Above, right: John Cassatt, 1871, by John Cassatt (1817-1892). Museum of Art, San Francisco, gift from the artist. Below, left: Margaret Fuller, 1871, by John Cassatt (1817-1892). Museum of Art, San Francisco, gift from the artist. Below, right: William Lloyd Garrison, 1871, by John Cassatt (1817-1892). Museum of Art, San Francisco, gift from the artist.



Fig. 1. George M. Foster, 'The American School' (1881). Canvas, 30 x 30 in. New York, Metropolitan Museum, Boston, 1881.
Fig. 2. George M. Foster, 'The American School' (1881). Canvas, 18 x 22 in. Washington, D.C., National Gallery. Right: G. Foster, 'The American School' (1881). Canvas, 18 x 22 in. Philadelphia, Historical Society of Pennsylvania.



[14] J. H. Davenport, *Lehrbuch der Zahlentheorie*, 2nd ed., Teubner, Leipzig, 1938; English ed., *Algebraic Number Theory*, Cambridge University Press, 1968.



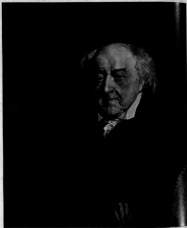
James O. Copley, *James Oglethorpe and Family*, 1784. Oil on canvas, 4 ft. 6 in. x 7 ft. 7 in. Boston, Museum of Fine Arts.
 James O. Copley, *James Oglethorpe*, 1784. Oil on canvas, 4 ft. 6 in. x 7 ft. 7 in. New York, Metropolitan Museum of Art.
 James O. Copley, *James Oglethorpe*, 1784. Oil on canvas, 4 ft. 6 in. x 7 ft. 7 in. Boston, Coll. Henry S. Thacher.



18. 19. *Still Life*, by Katt, William Katt, 1978. Painted 1978-1979 in Washington, D.C., for Museum of Art, New York. *Still Life*, by Katt, William Katt, 1978. Painted 1978-1979 in Washington, D.C., for Museum of Art, New York. *Still Life*, by Katt, William Katt, 1978. Painted 1978-1979 in Washington, D.C., for Museum of Art, New York.



[10] J. K. Hunter, *The Run with the Rabbit (Honey Bees)*, in 1980, *Science*, 211: 121 to Boston, University of New York Press.



RE. 191. G. Bowers John Adams as an Old Man, 1876. Canvas, 29 1/2 x 37 1/2 in. Wallcut, Mass., Charles Francis Adams Coll.



Fig. 10. (above) J. M. W. Turner, *Rain, Steam, and Great Bridge* (1843), oil, 10 1/2 x 14 1/2 in., New York, U.S. - The Metropolitan Museum of Art, Gift of the Society of Artists, 1907. (below) J. M. W. Turner, *Rain, Steam, and Great Bridge* (1843), oil, 10 1/2 x 14 1/2 in., New York, U.S. - The Metropolitan Museum of Art, Gift of the Society of Artists, 1907.

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15. 16 Robert Rauschenberg, *Storm in the Mountains*, 1965, 10 ft. x 10 ft. x 10 ft. (sculpture); *Storm in the Mountains*, 1965, 10 ft. x 10 ft. x 10 ft. (sculpture); *The Village of Lovers*, 1965, 10 ft. x 10 ft. x 10 ft. (sculpture); *The Village of Lovers*, 1965, 10 ft. x 10 ft. x 10 ft. (sculpture). Rauschenberg, 1965, 10 ft. x 10 ft. x 10 ft. (sculpture). Rauschenberg, 1965, 10 ft. x 10 ft. x 10 ft. (sculpture).



PL. 106. Above: J. M. W. Turner, *Rain, Steam, and Great Bridge*, 1843-44, oil, National Gallery, London. Below: J. M. W. Turner, *Rain, Steam, and Great Bridge*, 1843-44, oil, National Gallery, London. Below: J. M. W. Turner, *Rain, Steam, and Great Bridge*, 1843-44, oil, National Gallery, London. Below: J. M. W. Turner, *Rain, Steam, and Great Bridge*, 1843-44, oil, National Gallery, London.



² [15] J. C. Lagarias, *J. Number Theory*, 22 (1976), 127-132; New York: American Institute of Natural Sciences, Reprint, B. 62.

[illegible]



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THE AMERICAN ART SPACE COLUMN, 1971, by the artist, courtesy of the artist and the artist's gallery, New York, NY.



PL. 102. 1. Sheng, *Min Yan Sheng*, ca. 1985. Canvas, 45" H. Washington, D.C., Phillips Collection.



Fig. 10. J. M. W. Turner, *Rain, Steam, and Great Bridge*, 1843. Oil on canvas, 100 x 140 cm. London, National Gallery. Fig. 11. J. M. W. Turner, *Rain, Steam, and Great Bridge*, 1843. Oil on canvas, 100 x 140 cm. London, National Gallery. Fig. 12. J. M. W. Turner, *Rain, Steam, and Great Bridge*, 1843. Oil on canvas, 100 x 140 cm. London, National Gallery.



21. 22. *Cratichneumon* sp. (Hym., Ich.). 1. Head, a Group of Antennae, Waiting for the Sting to "Show How" — "Cut It Out" — "Sting" (Impaling). 2. Head, Waiting, Head, 20. 21. Right, A. B. Young, Carpenter and Beekeeper, from The Bay of All Young, England, Penn., New York, 1894, p. 20. (Hym., Ich. 22. Head, Waiting, 1894, London, 17-18.)



Fig. 10. (Left) C. Hough, *View for Christopher West*, 1916. Tempera on parchment, 12 1/2 x 10 in. Worcester, Mass., Art Museum. (Right) J. Pausanias, *Church at the Minerva*, 1916. Tempera, 10 1/2 x 10 in. Worcester, Mass., Art Museum. (Left) J. Smith, *The Riverside Bridge*, 1916. Tempera on oil and paper, 10 1/2 x 10 in. New York, Whitney Museum of American Art. (Right) C. Hough, *View for Christopher West*, 1916. Tempera, 12 1/2 x 10 in. New York, Brooklyn Museum.



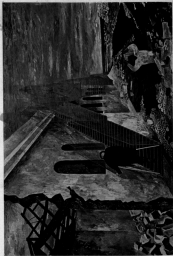


FIGURE 10. Fritz Koenig, *The Great Mother*, 1965. Cast iron, steel, and wood. Collection of the artist.





Fig. 100 Fritz Koenig, *The Mechanical Man*, 1934. H. 100 cm. (100 in.). (Collection, Museum, Hochschule für Kunst, Berlin)





1. The first image is a grid-based artwork, possibly a print or a painting, featuring a series of small, dark, irregular shapes arranged in a grid. The shapes are somewhat abstract, resembling cells or small figures. The overall effect is a dense, textured pattern.

2. The second image is a portrait of a person with dark, spiky hair. The person is looking slightly to the side. In the background, there is a circular, concentric pattern resembling a target or a stylized face. The overall effect is a high-contrast, graphic portrait.

3. The third image is a large, dark, abstract black and white photograph. It features a grid-like structure with faint lines and a central, irregular, dark shape that resembles a stylized figure or a complex organic form. The overall effect is a high-contrast, graphic abstract composition.

4. The fourth image is a large, dark, abstract black and white photograph. It shows a dense, textured surface with various shapes and patterns, possibly representing a landscape or a complex, organic structure. The overall effect is a high-contrast, graphic abstract composition.





1. *Still Life with Fruit*, 1945, oil on canvas, 18 x 24 in. (50.8 x 61 cm).
 2. *Still Life with Fruit*, 1945, oil on canvas, 18 x 24 in. (50.8 x 61 cm).
 3. *Still Life with Fruit*, 1945, oil on canvas, 18 x 24 in. (50.8 x 61 cm).
 4. *Still Life with Fruit*, 1945, oil on canvas, 18 x 24 in. (50.8 x 61 cm).
 5. *Still Life with Fruit*, 1945, oil on canvas, 18 x 24 in. (50.8 x 61 cm).
 6. *Still Life with Fruit*, 1945, oil on canvas, 18 x 24 in. (50.8 x 61 cm).
 7. *Still Life with Fruit*, 1945, oil on canvas, 18 x 24 in. (50.8 x 61 cm).
 8. *Still Life with Fruit*, 1945, oil on canvas, 18 x 24 in. (50.8 x 61 cm).
 9. *Still Life with Fruit*, 1945, oil on canvas, 18 x 24 in. (50.8 x 61 cm).
 10. *Still Life with Fruit*, 1945, oil on canvas, 18 x 24 in. (50.8 x 61 cm).



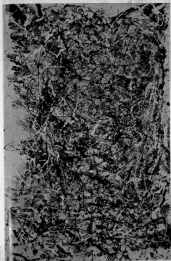


Fig. 10. J. Pollock, *Number 1*, 1950. Gallery 100, Inc., - 100, 101 New York Museum of Modern Art.



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112. Above, left: M. S. Rosten, *The Spring Cottage*, ca. 1875, bronze, 64 x 20 x 16, New York, Metropolitan Museum. Right: J. Rogers, *Coming to the Forum*, 1876, plaster, 18 x 27 x 16, New York, New York Historical Society. Below, left: W. G. Thompson and E. Smith, *Industrial Progress*, 1881, bronze (base, granite), 100 x 100 x 100, Madison Square. Right: G. G. Bernard, *Flight of the Dove*, 1880, marble, 100 x 100, New York, Metropolitan Museum.



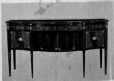
PL. 18. Above, left: H. Brachmann, *Prætorship*, 1934. Bronze with gold leaf, 10 1/2 in. New York, Brachmann Collection. Right: H. Brachmann, *Prætorship*, 1934. Bronze with gold leaf, 10 1/2 in. New York, Brachmann Collection. Below, left: H. Brachmann, *Prætorship*, 1934. Bronze with gold leaf, 10 1/2 in. New York, Brachmann Collection. Right: H. Brachmann, *Prætorship*, 1934. Bronze with gold leaf, 10 1/2 in. New York, Brachmann Collection. Below, left: H. Brachmann, *Prætorship*, 1934. Bronze with gold leaf, 10 1/2 in. New York, Brachmann Collection. Right: H. Brachmann, *Prætorship*, 1934. Bronze with gold leaf, 10 1/2 in. New York, Brachmann Collection.



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11. Glass, left: E. Raymond, Litter glass vessels, 1955; right: P. Muraw, cylindrical seating groups in white spun glass for Habitat 67, 1965; bottom, left: Mies, Barcelona in Sweden, 1929; right: Hans Scharoun, sculptural structure, 1958; last row, left: Louis Kahn, Kahn Foundation, Milton, 1957; E. Saarlin, interior chair for Herman Miller Furniture Co., 1964; right: Hans Scharoun, structure desk for work and writing, 1958.

AMERICAN ART SINCE COLUMBUS



14. (a) *Group*, by J. A. Lawrence, "Wind," *Reprints*, various, various and unpublished, 1960, San Francisco Museum of Art, 1960. (b) *Group*, by J. A. Lawrence, "Wind," *Reprints*, various, various and unpublished, 1960, San Francisco Museum of Art, 1960. (c) *Group*, by J. A. Lawrence, "Wind," *Reprints*, various, various and unpublished, 1960, San Francisco Museum of Art, 1960. (d) *Group*, by J. A. Lawrence, "Wind," *Reprints*, various, various and unpublished, 1960, San Francisco Museum of Art, 1960.



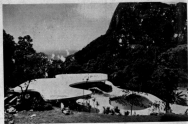




18, 19. Above, Mexico City, facade of the Cathedral, San Pedro y San Pablo, 1697. (Below, Mexico, Sanctuary of Guadalupe, 1820-22, 1825. Left, ground tile and white Chiriquipolanco ceiling. Right, Toluca, Mexico, Church of the Holy Spirit of St. Basil, 1825-26.)



24. (above) J. McQueen, *El Encuentro*; J. Martínez de Velasco, *Adorno en Arquitectura* (top right, second by J. Martínez, *Monstruo*); (below) Robert A. R. Smith, *Arquitectura cultural y generacional*, Santiago, near Rio de Janeiro, Brazil, 1968.



15. 148. Above: R. Rauschenberg, *Untitled* (1965), Rio de Janeiro, 1965. Below: Left: O. Niemeyer, *Ministry of Education and Health*, Rio de Janeiro, 1957-62.

[illegible]



Fig. 4. Macha Pacha, from two views of the site.





11. 10. 1981. Andreas Proff, *Architectural Model*. 1. Right shows: The "House" of the "House". The "House" of the "House".



PL. 10. Machu Picchu, Peru. Above: The "Wall of the Three Windows." Below: Wall with niches.



ANDALUSIAN PHOTOGRAPHY



PL. 102. *Ciprés, Pyre, Alentejo, left: Stone wall along the Rio Lopo, right: Stone wall and bridge gate of the Church of S. Brás—
Alentejo, left: Lopo, near Lopo. Remains of a building.*



Fig. 10. Stone, Stone. The stone with further evidence.



PL. 116. *Barroblanco*, near Cuzco (see above). View of the fortifications from the top of the "Great Tower" looking out of the main gate.

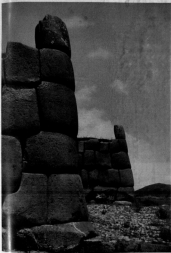


Fig. 20. Fortifications near Hanoi, Vietn. Two spots of the fortifications.



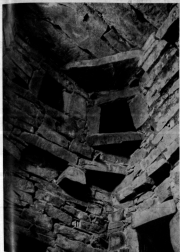
PLATE 18. River Canyon, New Mexico, showing ruins of ancient "Indian" (Anasazi) culture. (Continued) Ruins of the "Anasazi" culture.



Fig. 12. New Castro, Peru. Fortification of Chacabambas where: The "House of the Indians" below "Wall of the Indians" (Machu de la Huaca).



Fig. 104. Kiln, near New Orleans with circular ground plan.



ANDIAN PRETEXTURES



(18, 19) Above: Kunturwasi, near Lima; Below: Chacabamb, near Trujillo, Peru; Right

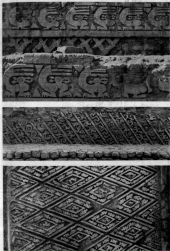


Fig. 1. ChusChus, near Tumbes, Peru: Details of the woven decorations.



PL. 101. Pachuca, Ariz. Above: General view of the new "temple." Below: General view of new "Temple of the Sun."



[2] [3] *Albertus Magnus*, *Summa Theologiae*, 1^a 2^a 2^aae, q. 100, a. 1, ad 2^{am} et 3^{am}; *Summa Theologiae*, 1^a 2^a 2^aae, q. 100, a. 1, ad 2^{am} et 3^{am}; *Summa Theologiae*, 1^a 2^a 2^aae, q. 100, a. 1, ad 2^{am} et 3^{am}.





Fig. 10. *Composition III* (left) and *Composition IV* (right) by Andreas Prothentorf, 1968. Both works are in black and white. The left work is a woodcut, the right work is a linocut.



PL. 104. Above, left: Tablet from Chaco de Andino, Peru. 10.5 in. x 1 in. Center and right: Ends of two tablets of the "Group 2" Chaco de Andino. Peru. Original sizes, 10.5 in. x 1 in. Below: Stone Tablet National de Arqueología y Etnología, Chaco de Andino. Fragment of a tablet representing a vessel, 1.4 x 0.5 in.





FIG. 100. *Tubakomaraa* sculptures. Bahukla, Nepal. 101. Female figure as "El Dabla" - 100, 4 1/2 in. 102. Another female figure seated, a kneeling figure, 100, 3 1/2 in. 103. Bahukla, *Tubakomaraa* Bahukla. Bas-relief representing a figure with a seated figure, 100, 4 1/2 in.



Fig. 1. Palenque, B'hoja. Stone. The "Gateway of the Sun." No. 110. Actual length of the stone.





Fig. 1. Pottery fragment from Tapa. Two fragments with human figures under the arch of the sky. Mochila, Museum of Ethnology.



10, 11. Above, left: 'Volcanic' results from southern Peru. Right: 'Volcanic' results. Below, left: 'Volcanic' results. Right: 'Volcanic' results from the region of Pucallpa, southern Peru. 12, 13. Above: 'Volcanic' results from the region of Pucallpa, southern Peru. 14, 15. Below: 'Volcanic' results from the region of Pucallpa, southern Peru.



Fig. 10. *Parus* from Colombia. Above, left: *Spinolus spinolus* at the top of the spines of the *Centella* leaves. Right: *Spinolus* perched on the tip of the spine of a *Centella* leaf. Below, left: *Spinolus* perched on the tip of the spine of a *Centella* leaf. Right: *Spinolus* perched on the tip of the spine of a *Centella* leaf. Below, right: *Spinolus* perched on the tip of the spine of a *Centella* leaf.





Pl. 55. Wooden statue. Now representing a seated figure. From the collection of the University of Chicago, Museum of Art.

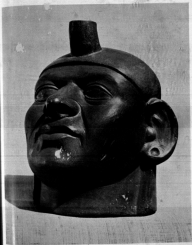


Fig. 10. Mask of a person. Material: stone. Chimu, Peru. No. 10. Museo de Historia.



24, 25. Mexican pottery. *Quetzalcoatl* vase, *Morey*, 188. Vase with *Amazilia* head, *Chandona*, Peru. Right: *Toucan* from *Chavila*, *Bull*, *Chicago*. *Indian* *Quetzalcoatl* vase, *Bull*, 187. Head of *Amazilia*, *Indian* *Quetzalcoatl* vase, *Bull*, 188. *Amazilia* *Quetzalcoatl* vase, *Bull*, 189.



Fig. 2. Vladimir Sorokin's 'Face' representing a turned figure wrapped in a garment. (Installation, Staatliche Kunsthalle, Bonn, Germany, October 2001)



PLATE 100. Stuffed jar, Parthian era from Olinda, Pers. (Chicago, Nelson-Atkins Mus.).



Fig. 1. *Grande busta di Adrian Proterto, Rio Grande do Sul, Brasil, 1968. In: L'Espresso, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025.*



PL. 101. Detail of a woolen blanket for wrapping the dead, from Barrow, Alaska. Made by the Indians.



Fig. 26. Detail of the facade of a temple from Andalan, Peru. Lima, Museo Nacional de Arqueología e Historia.



Pl. 28. *Stomach with, western form*. Fragment of tape with representations of birds. Museum, Moscow (the collection of the Soviet State).
 Moscow State Coll.

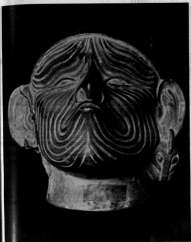
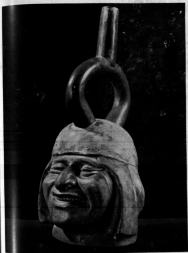


Fig. 10. Wooden mask. Monte Aro, Tuxtla Gut., Chiapas, Mexico. Museum für Völkerkunde.



FIG. 10. Shaping water jar from Chiriquito, Peru. Above, left: Shaping Spout of greenware and -fired; right: Shaping vessel with round lip. Below, left: Shaping Spout. Right: Shaping vessel with a lip. (Left, Chicago, Southern Cone; Right, Chicago, Southern Cone)



15. 92. Wooden portrait (Bustani was called "the laughing man.") Lima, Museo Nacional de Antropología e Historia.



18, 19. Native jugs. Vessels with painted decorations, from the Maidu and Ohlone cultures. From Chicago Natural History Survey 1911.



Fig. 26. Wicker pot. (Engraved from the Gilgamesh Tablets. Note change. British Museum Press.)

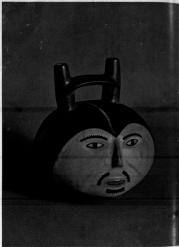


Fig. 100. Thorne, now representing a human face. Chicago, Robert Rauschenberg Coll.



175. Water jar in the form of a human figure. Lima, Museo Nacional de Arqueología y Etnología.



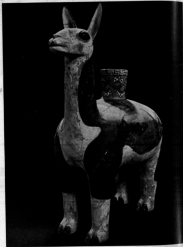
Pl. 101. Native pottery. Vase in the style called "Kana B." Lima, Museo Nacional de Arqueología e Historia.



FIG. 10. Native American portraits. (Clockwise and counter-clockwise from above, left) Lenni Lenape, Museum of Anthropology & American Archaeology, Berlin; (right) Huron, Museum für Völkerkunde.



Fig. 26. *Stachys* sp. (left), *Andropogon* sp. (right). Top: Left: *Stachys* sp. (left), *Andropogon* sp. (right). Bottom: Left: *Stachys* sp. (left), *Andropogon* sp. (right). Middle: Left: *Stachys* sp. (left), *Andropogon* sp. (right). Right: *Stachys* sp. (left), *Andropogon* sp. (right). Bottom: Left: *Stachys* sp. (left), *Andropogon* sp. (right). Right: *Stachys* sp. (left), *Andropogon* sp. (right).



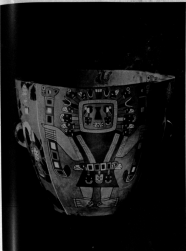
18, 19. *Alpacas* in *Yachaywasi* style. Large one representing a *Guinea* Llama. Museo Nacional de Antropología e Historia.



15 (2) *Yuma pottery. Two vases decorated with animal figures. Lima, Museo Nacional de Arqueología e Historia.*



10, 106. Vase decorated with the figure of a monkey. Lima, Museo Nacional de Antropología e Historia.



17-26. Mask of the *Thalassidroma* tribe, *Thalassidroma* with with *Thalassidroma* mask. New York, American Museum of Natural History.



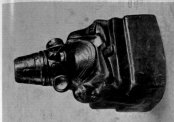
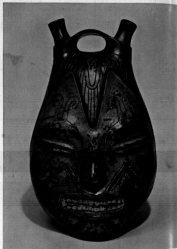


PLATE 1. (Left) Pottery vessel, dark, ornate metal vessel, likely a ceremonial pot or jar, featuring a wide, flared base and a tall, conical lid. (Right) Pottery vessel, dark, ornate metal vessel, likely a ceremonial pot or jar, featuring a wide, flared base and a tall, conical lid.

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18, 20. View to the front of a basket head, Phoenix, Ariz. Robert M. W. Kelly.



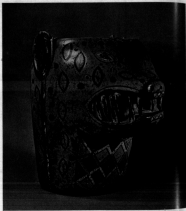
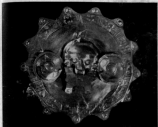




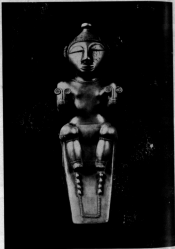
Fig. 10. *Clay masks (Haida). Paris. Double mask representing two natural figures. (Note: Mask of Haida).*



Pl. 26. Same pottery. Two "archillos." Clay co., 18 in. Philadelphia University Museum.



1. Dr. Jonathan Smith, Father of the State: Examples and Notes: Religious and political: New York: Burt, Rogers, Moore and Co.



21. (26) Kongoan prototype, Shinkafa style. Female figure. Coll. No. 4 in Philadelphia University Museum.



Fig. 10. Ancient Egyptian bronze statue, votive offering. (Metropolitan Museum of Art, New York, Brooklyn Museum)



PL. 32. *Colombian jewelry. Above: Quimbaya animal figure, Gold, small size. Below: Chibcha ornaments. In center: Gold. Above and standing, right: standing figure. Below: Muisca figure.*



Fig. 10. Inca mask, gold, Huancayo, Peru. (From the collection of the British Museum.)



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21 (12). Peruvian jewelry. From left, bottom and various ornaments. Chicago, Nathan Cummings Coll.

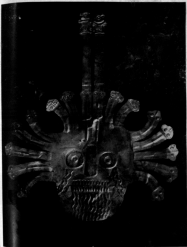


Fig. 10. Mescalero band, Kiowa-Comanche group. Mask, Mescalero band, Kiowa-Comanche group.



PL. 22. *Furrier silhouette*, Cast-iron. Mount Adams, In. 17½ in. New York, American Museum of Natural History



PL 255. *Calder* for base of a statue (cast, stone with, black, bronze for "hair")



PL. 28. Above: Temple of Shiva at Akola, 18th cent. Below: The palace of the Vijayanagar King at Chandragiri, 16th cent.



Fig. 22. — From left: The seated Bodhisattva, from Anzenroden, 30 cm x 2.2. Right: Fragment of the Buddha, from Andria, 1.5 x 0.5 cm x 2.2. Below: The seated Buddha, from Andria, 30 cm x 22. Berlin, German Museum.



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81. (24) Above: Siva, Shakti, and Siva, with Warring, 18th cent. Delhi, National Museum of India, Varanasi. (25) and (26) Below: Siva, Shakti, and Siva, with Warring, 18th cent. Delhi, National Museum of India, Varanasi. (27) Below: Siva, Shakti, and Siva, with Warring, 18th cent. Delhi, National Museum of India, Varanasi. (28) Below: Siva, Shakti, and Siva, with Warring, 18th cent. Delhi, National Museum of India, Varanasi.



Fig. 1. The sculpture "The Great Mother" by the artist, 1980. The sculpture "The Great Mother" by the artist, 1980. The sculpture "The Great Mother" by the artist, 1980.

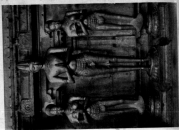
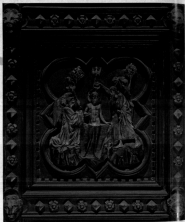
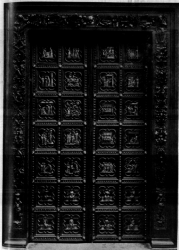




Fig. 1. A large, ornate rug with a complex, repeating geometric pattern, laid out on a dark surface. The rug features a dense, intricate design of interlocking shapes, possibly stylized flowers or stars, creating a complex, repeating pattern. The rug is framed by a decorative border.











PL. III. The first of Aguilera's (North) wall, Florence, Company of the Garter.





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PL. 28. *The Trinity*. Encaustic on wood, 8 in. x 7 in. Florence, St. Annunziata.





Fig. 106. Scenes of the Last Supper. Botticelli (about 1470-1480). Florence, Convento di S. Apollonia.





100



Fig. 10. The Assumption of the Virgin, by Andrés del Bartagno. (From the collection of the Museo de Arte de la Universidad de la Habana, Havana, Cuba.)



Fig. 1. The Circumcision. Andrea del Cartaggio. Florence, Palazzo di S. Spirito.



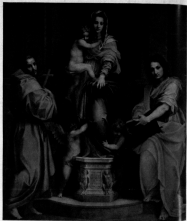
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Pl. 10. *Statua di Francesco Sforzato* (copie). 17-17 h. (Rome, S. Maria del Popolo).







PL. 125. *The Assumption of the Virgin*. Paint, 16. 1/2 in. Florence. Pitti Gallery. Vatican.



26. 266 The Death of the Virgin. Fresco, 1535, 4 ft. x 11 ft. 6 in. Florence: *Salotto di San Niccolò*.



Fig. 1. Scene at St. Philip's Basilica, Florence, 1515. (The Museum, Florence, Italy)



Fig. 10. - La Vergine, detail. Museo del Santo, 1000-1100, in: Pina, Cathedral.

ANDREA DEL VANTO







48. 285. The 'Madonna del Lupo' (Florence 4 B., 3 B., + 13 B., 2 in. Florence 48. Anonymous (see 1344)



Fig. 106. Figure study of St. Michael for the painting of Piero della Francesca in the Uffizi Gallery. (Drawing on colored paper, 67.7 by 17.6 cm. Florence, Uffizi, Catalogue des Dessins et Gravures des 1520's.)



P. 09 **Stress-Response in the Late 19th-Century Economy of the World**



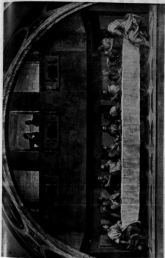


Fig. 100 The Last Supper of Christ, 1520-21 (St. Lawrence, Florence, Confraternity of St. Luke)



Pl. 26. The Madonna della Vite, about 1480, Christ, 127 x 107 in. Florence, Museo di S. Marco.

ANDELICIO



Fig. 1. The main sculpture. Panel, 110 x 110 cm. 15th century. (From the collection of the Vatican Museums). Below: The Baptism of the Virgin, 15th century. The pediment of the Altarpiece. Panel, 110 x 110 cm. 15th century. (From the collection of the Vatican Museums).





Pl. 161. The Procession of St. Peter from the portals of the Madonna of the Lamentation. Detail, 1481-82 in Palazzo Medici in Florence. Museo di Capodimonte.

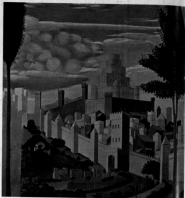


Fig. 1. View of the Misperton. Paint: oil size. 1 1/2, 1 1/2 in. (1 1/2 in. x 1 1/2 in.). Turner, J. M. W. (1775-1840).



² *cf.* The Waking of the First child of the domestic dog legend. First, and only, 1715-1716 in Boston, the year of 1715.



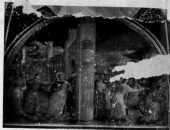
Pl. 100. The Descent into Limbo. From the *Book of Hours of the Duke of Berry*, 1413, fol. 10v, Paris, France, Bibliothèque de la Ville de Paris.



Fig. 17. St. Dominic and St. Nicholas of Bari, side panel from the Polyptych of Perugia (about 1465) in Perugia, Galleria Nazionale dell'Umbria.







St. 184. Procession in the church of St. Lawrence.
 (Left) The Pope Medici on St. Lawrence.

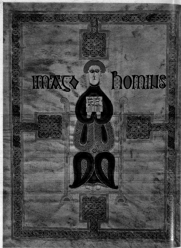
St. 184. Procession in the church of St. Lawrence.
 (Left) The Pope Medici on St. Lawrence.







18. 189. The Believing of St. Clement and Stephen. Paint. 16-18 in. Italy, 16th c.



PL. 27v. Lindisfarne Gospels. Detail of the Lindisfarne Gospels. Bodleian Library, Oxford. (Cat. 1991, fol. 27v)

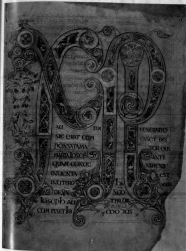


Fig. 25. Letter 'P' from the manuscript "The Book of the City of Dreadful Night" (London: T. Agnew & Sons, 1894).



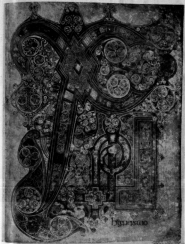
Pl. 106. *Canterbury Hospital Purbeck Stone with statue of St. John the Evangelist, London, British Museum (1891-1892, vol. 454).*



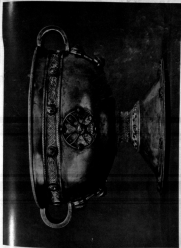
Fig. 26. Detail of the tapestry of the Virgin Mary and the Christ Child. The original is in the collection of the British Museum, London.



Pl. 26. *English-Scottish Textiles* (London, British Museum of Natural History, 1911).







AN OLD, ORNATE, METAL SAFE, WITH DRAWERS, FOR THE STORAGE OF MONEY, BILLS, AND OTHER VALUABLES. THE SAFE IS MADE OF IRON.



Pl. 106. Metal jewelry from the Sarcophagus (the silver vessel). The case is decorated with silver, gold, and bronze. The central panel is decorated with silver and gold. The sides are decorated with silver and gold. The bottom is decorated with silver and gold. The chain is made of silver and gold.



10. 28. Left above: Monumental Space (part of the series) from the Series The City Inside (New York: World of Art Publications, 1968). The Public Museum, Chicago, above: The Great Wall, 1968, oil and charcoal, 100 x 100 cm. Museum of Modern Art, New York, below: Monumental Space (part of the series) from the Series The City Inside (New York: World of Art Publications, 1968). The Public Museum, Chicago, below: Monumental Space (part of the series) from the Series The City Inside (New York: World of Art Publications, 1968). The Public Museum, Chicago.



[1] [2] Above: The Great Judgment; Below: The Separation. Middle: Politics, Regulatory, and Justice. Below: The Separation. Middle: Politics, Regulatory, and Justice.

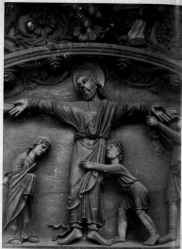


Fig. 101. Detail of the Presentation in the Temple. Middle. From the Baptistery.

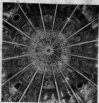


Fig. 1. The Antelam relief, showing the central figure in a dynamic pose, surrounded by other figures and foliage.



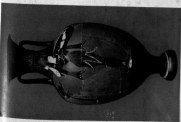


Pl. 106. Detail from the *Martyrdom of St. Andrew*. Master, Venetian. Italy, 15. Century. (Museum, Florence.)





At the left: "The Spirit of the Future" by the artist. At the right: "The Spirit of the Future" by the artist. At the right: "The Spirit of the Future" by the artist.



in 1841. The vase is decorated with a relief of a seated figure, possibly a deity or a person in a chariot, surrounded by foliage. The vase is shown against a dark background.





FIG. 101. Above: left, Exterior, Cathedral of the Holy Spirit, Philadelphia, 1901; right, Interior of the Cathedral, 1901. Below: left, Exterior, Cathedral of the Holy Spirit, Philadelphia, 1901; right, Interior of the Cathedral, 1901.



Pl. 20. Above left: Statue with its base (British Museum, London). Above right: Statue of a seated female figure (British Museum, London). Below: Four seated male figures (British Museum, London). Below right: Detail of the base (British Museum, London).

ANTIQUE REVIVAL



Left, above: Museum, Washington, in the foreground of St. Peter in Vaticano, Rome. Center: Neoclassical, Germany, the Museum of Ludwig I, Berlin. R. Museum, St. Michael's, St. Michael's of Padua, Italy. Naples, Italy, above: the Museum, Chapel of the Villa di St. Michael in Capri, near Naples. Below: St. Michael's, St. Michael's in the Vatican, Rome. Below, A. and St. Peter's, Church of St. Peter's Basilica, Rome, near St. Peter's.

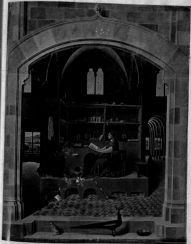
[illegible]



From the Parthenon, Acropolis, Athens. (Left) Detail of the relief sculpture, "The Birth of Athena," from the Parthenon, Athens. (Right) Detail of the relief sculpture, "The Birth of Athena," from the Parthenon, Athens. (Left) Detail of the relief sculpture, "The Birth of Athena," from the Parthenon, Athens. (Right) Detail of the relief sculpture, "The Birth of Athena," from the Parthenon, Athens.



FIG. 101. The Virgin Annunciate, Padua, 1770-1870. In Palazzo, Galleria Nazionale del Veneto.





Pl. 101. The Crucifixion. Paint, 1475-1476. In London National Gallery.



Above, left: *The Virgin Annunciate*. Panel, 10 1/2 x 12 1/2 in. Messina, Pinacoteca. Right: *Nativity*. Panel, 10 1/2 x 12 1/2 in. Messina, National Gallery. Below: *Visit of the Three Kings to the Stable*. Panel, 12 1/2 x 12 1/2 in. Reggio Calabria, 1940. Messina with Filippo Savoca.





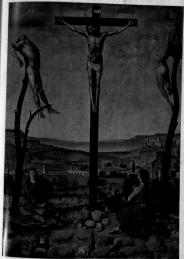
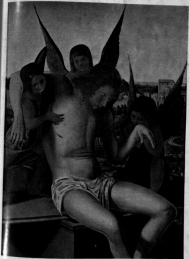


Fig. 103. The Crucifixion, Panel, 25 x 45/8 in., Antonello (Museum Kunst der Universität).



[2] H. Shapiro et al., *Phys. Rev. Lett.* **55**, 1101 (1985).

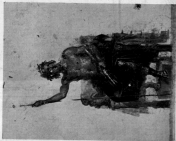




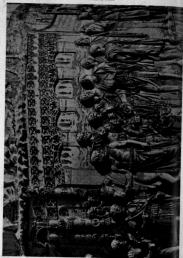
PL. 128. Portrait of a Man. (Front, 1574-1575) in *Collezione*, Museum of the S. Antonio Hall.



Fig. 51. Portrait of a King of Sicily, about 1470-1475, oil on wood, 14 1/2 x 11 1/2 in. Catania, Italy. Fondazione Magnanuca.









PL. 58. Arabian sculpture. *Al-Bustan*, M. H. and T. P. in Rome, Museo Nazionale Romano.



Fig. 12. (Left) Stone head, *Ediacara*, 170-175 A.D. (Right) Stone head, *Adhmar*, 175-180 A.D. (Left) Stone head, *Adhmar*, 175-180 A.D. (Right) Stone head, *Adhmar*, 175-180 A.D.

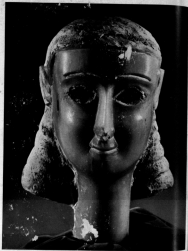


Fig. 100. Terracotta head from Tassili n'Ajjer. (Reproduced by permission of the Trustees of the British Museum, London.)



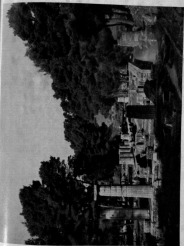


Fig. 10. The Temple of Abu Simbel.



PL. 102. Above: Delphi, Temple of Apollo; Below: Agrigento, Temple of Athena (Agrigento)

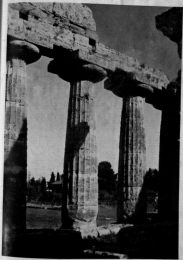


Fig. 55. Perseus, Greek temple, the so-called "Basilica," detail of the main colonnade.



Pl. III. Above: Acorn capital from Gela, Leontinean, Gela, Sicily (Museum Berlin, 104). Acorn capital from Naucratis (British Museum, London, No. 1175). Below: The Naucratis (Archaeological Museum, Berlin). Capital from the Temple of Apollo at Didyma, Miletus, No. 111, 112 in Berlin, Museum.



Pl. 12. *Plat' Sana' (Kashmiri), Shalwar, with (Shalwar and Shalwar) fighting over the body of Kambhara (Shalwar), 1875, in the National Museum of the British Museum, London, British Museum.*

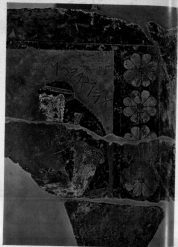


FIG. 10. *Stylized, symmetrical designs from "Warrior," directly central dimensions 20-25 in. Round ball of 1800-1810. National Museum.*



PLATE 107. The "Lord Venkateswara" (small) standing. The tall of the wall is a Hindu temple, 18th century.



PL. 108 The "Adoration of the Kings" is a bronze mirror with scenes of weighing and loading goods, as a type of "weighing" mirror, 10th to 11th century, Berlin-Museum.



² [20] The *Mindings of Substances*, *Journal of Propositional Calculus*, 19, 111-116. *Journal of Theoria*, 19, 111-116. *Journal of Theoria*, 19, 111-116.



Pl. 100. Above, left: Head of a griffin, decoration of a bronze vessel (16). 1675 B.C. Middle of The same (17). 1650 B.C. Right: Helmet fragment (18). 1675 B.C. Below: Relief of 1650 B.C. (19). Below: Relief of the same (20). 1650 B.C. Below: Relief of the same (21). 1650 B.C.

[illegible]



PL. 55. *Alcibiades' Presentation of Alcibiades*. Relief from the temple at Paestum, Italy. (Lentini, *ib.*, 187). In National Hall of Art and
in a Museum of Art, New York. Below: *The Lady of Amarna*. (Lentini, *ib.*, 187). In National Hall of Art and
in a Museum of Art, New York. Right: *Alcibiades' Presentation of Alcibiades*. Relief from the temple at Paestum, Italy. (Lentini, *ib.*, 187). In National Hall of Art and
in a Museum of Art, New York.





PL. 104. Figure of Athena, drawn from the pediment with Herakles and the Kentauros (Lionel Soper). Beginning of 4th cent. B.C. Athens, Acropolis Museum.



Fig. 101. Head of a Buddha, ca. 100 B.C. (Museum, No. 171) in London, National Museum.



PL. 16. Left, *Figure of Athena*, ca. 480 B.C., Marble, H., 55 in., Athens, National Museum, Egypt (Metropolitan Museum, New York); Right, *Figure of Athena*, ca. 480 B.C., Marble, H., 55 in., Athens, National Museum.



Fig. 10. Head of Osiris, ca. 1300 B.C., detail of the east pediment of the mortuary temple of Mentuhotep at the Acropolis, Luxor. Length, 10.5 m. (34 ft.). Museum, Memphis, Egypt.



10. 100. Above: The base of the Colossal tomb and chapel wall, head of the "Famous Man" (Wall No. 107) in Middle Egypt (1971-72). Below: The base of the Colossal tomb and chapel wall, head of the "Famous Man" (Wall No. 107) in Middle Egypt (1971-72). Below: The base of the Colossal tomb and chapel wall, head of the "Famous Man" (Wall No. 107) in Middle Egypt (1971-72).



190. Egyptian. Vase with the body of Amenhotep III. (Gift of an anonymous friend of the author, 1911). Museum, Berlin.

[illegible]



Pl. 10. Nure (25), ca. 1000 B.C. Marble, h. .4 m., Museum, Istanbul, Turkey.



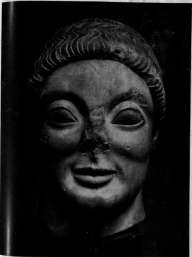
PL. 10. Philippon (P.)'s version. Painting on terra-cotta. B. P. in. End of 19th cent. or 19th cent. Syracuse, Museum.



Fig. 1. "Athena Parthenos." Marble, 4th c. B.C. Middle of 4th century B.C. Athens, Acropolis. Museum of the Metropolitan Museum of Art, New York. The breastplate is the one given by the Lapiths.



Pl. 106. Crown from Via Novara, and shield showing a portion of the relief. Bronze, half in., 18 in., 17 in. to 19 in. Height half of shield, 18 in. to 19 in. (British Museum, London)



12-13. Fritz Koenig, *Red Head*, 1934-35. Second half of 20th cent. U.S. Copyright, by Fritz Koenig.



FIG. 156. Votive statue given by Christians, from the Sanctuary of Vesta at Rome, 100 B.C. (L. Hutton, No. 10, *Early Greece*).



Fig. 1. Frontal view of a terracotta head of a female figure, Kameiros, Rhodes, 1st century B.C. (left). Profile view of the same head, Kameiros, Rhodes, 1st century B.C. (right). Fig. 2. Frontal view of a terracotta head of a female figure, Kameiros, Rhodes, 1st century B.C. (left). Profile view of the same head, Kameiros, Rhodes, 1st century B.C. (right).



[13] H. H. Bode, *Methods of the Trade and Home Signalment*, 2nd ed. of the weekly issues of the *Transactions of the Signalmen of B.M.*, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544,



[1] 1999. *Applied Numerical Analysis of the Laplace and Poisson Problems*. John Wiley & Sons, Inc., New York, Wiley Online.

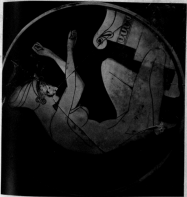


Fig. 1. A dark, textured, irregularly shaped object, possibly a fossil or a piece of ancient pottery, mounted on a light-colored background. The object features several circular or oval indentations and a rough, pitted surface. A small, light-colored, circular object is visible near the top center of the main object.



FIG. 144. Marble relief, ca. 500 B.C. (Metropolitan Museum of Art, New York). (Reproduced by permission of the Metropolitan Museum of Art.)







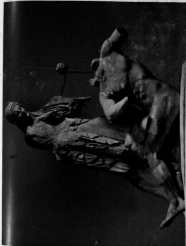


Fig. 121. *Nike and Herakles*. ca. 450 B.C. Detail of the west pediment of the temple of Athena on the Acropolis, Athens. M., 177. In Athens, Acropolis Museum.



PL 388. (Hansen, Arthur). *Handbook for the professional*. 1st. 500 p. s.p. Boston, Ma., 1971. 10 cm. 107 p. in. Subjects: National Standards; Federal Standards. Hansen, Arthur. *Handbook for the professional*. 1st. 500 p. s.p. Boston, Ma., 1971. 10 cm. 107 p. in. Subjects: National Standards; Federal Standards. Hansen, Arthur. *Handbook for the professional*. 1st. 500 p. s.p. Boston, Ma., 1971. 10 cm. 107 p. in. Subjects: National Standards; Federal Standards.



75. 66. Terracotta seated female figure, breast of the woman prominent at the Temple of Aphrodite at Herakleia (Marone), Sicily, 4th c. B.C. (End of this case, 5. Clodius, Museum).



Fig. 104. Statue of a woman, by the artist, 18th century. In the 18th century, in the 18th century, in the 18th century, in the 18th century.

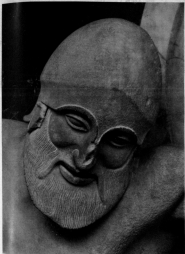


Fig. 10. Head of a woman, found at the east end of the temple at Angkor Wat, 12th-13th century. (See also Fig. 11, p. 100.)



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Fig. 10. Figure of a seated figure of a deity, 17th-18th century, in the collection of the Museum of the History of Art, University of Tokyo.



61. Shiva dancing Shakti. Detail. Detached from the Front of the Tirthanatha, ca. 400 A.D., Varanasi, Uttar Pradesh.

[illegible]









45. Architecture (interior, Istanbul, Hagia Sophia, various views).



81-82. Observed in architectural space. Above: Tomb of Euphrates, Italy, granite with limestone. Below, left: Carved stone wall. Right: Entrance to the tomb of the Euphrates, Italy.

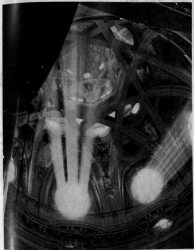


Fig. 10. Physical vs. architectural space. 12. Kioski, dome of St. Barbara, Torino.



Fig. 144. Archaeological ruins: Rome, Italy. Roman: Basilica of Constantine. Right: Middle Ages: Strategia del Corso Romano, 14. 1700-1800.



14 131 Architectural space. Above: Nave, St. Trinité, Amiens. Below: Nave, France, Cathedral, detail.



PL. 100. Architectural space. Left, above: Interior, Cathedral of St. Basil, Moscow. Right, above: Interior, Church of St. Basil, Moscow. Center: Interior, St. Basil's Cathedral, Moscow. Right, below: Interior, St. Basil's Cathedral, Moscow. Right, below: Interior, St. Basil's Cathedral, Moscow.



78-80 Architecture's space: above, left: Chhatrapati Shivaji Maharaj Vastu Sangrahalaya, Mumbai; right: Vastu Sangrahalaya, Mumbai; below: the Vastu Sangrahalaya, Mumbai; below: the Vastu Sangrahalaya, Mumbai.

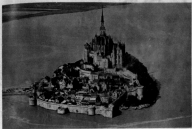
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FIGURE 10-100 Views of urban form and structure. Above: L. Vanstraelen, Royal Palace, Toronto. Below: Below: V. Rogers, centre of Toronto, near Lake.



Fig. 26. Internal and external space. Left, above: Bologna, aerial view; Center: Torino, Italy, the square; Below: Torino, Italy, the square; Right, above: Paris, Place de l'Étoile; Center: Rome, Piazza del Campidoglio; Below: Paris, Place de l'Étoile.



12-21. Internal and external views. Above: Mont-Saint-Michel, France. Below: Saint-Malo, France, aerial view.



PL 90. Hieroglyphs without internal space. Above: Memphis, Egypt, the Step Pyramid of Djoser. Below, left: Akhenaten, small temple of Akhenaten, Egypt, 18th century. Middle: center, Akhenaten's temple in the Valley of the Kings, 18th century. Right: Akhenaten's temple, 18th century. Below: Akhenaten's temple, 18th century.



Fig. 2. Structures without external support. Left, above: Phoenician temple, Venice. In center: Statue, Statue, New York, Statue (Robert Ralston, 1901). Below: Statue, Statue (Robert Ralston, 1901). Right, above: Statue, Statue (Robert Ralston, 1901). Below: Statue, Statue (Robert Ralston, 1901).



Fig. 30 The effects of urban conditions. (Above, left, left), the Acropolis from the air. (Right, Monumental, Italy, aerial view. Below, Athens, Greece).



Fig. 10. The effect of urban conditions. Above, left: Athens, the Propylaea seen between the columns of the Pericleian porch. The view, Athens, Greece, seen from the White Gates. Above, right: Tall, dark, vertical view. Right: Building for Stuttgart, Germany.



Fig. 12 The effect of urban conditions. Above, left: St. Nicholas Cathedral. Right: St. Nicholas Cathedral. Below, left: St. Nicholas Cathedral. Right: St. Nicholas Cathedral.



Fig. 288. Famous architecture. Left, above: Rastatt, Germany, view of the Rastatt church and the Rastatt church tower. Right, above: Capri, Italy, view of the Hotel de Ville. Below: Capri, Italy, view of the Hotel de Ville. Below: Capri, Italy, view of the Hotel de Ville. Below: Capri, Italy, view of the Hotel de Ville.



18. The Romanesque architecture. Left, above: Rome, Via Colonna. Below: Rome, Italy—a street. Right, above: Capri, Italy, hotel. Below: Rome, Piazza della Minerva.



PL. 105. The question of space. Left above: Mexico, Spain, Temple of April 2. Below: Ecuador, Santa Cecilia. Right above: Temple of Bolivia, lower vestibule. Center: Caracas, S. Maria. Netherlands, crypt. Below: Madrid, Spain, crypt of the Cathedral.





PLATE 40. The pattern of buildings and the spaces of urban life. Left, above: Buenos Aires, Plaza del Congreso. Below: Buenos Aires, Plaza San Martín. Right, above: Buenos Aires, Plaza San Martín. Below: Buenos Aires, Plaza San Martín.



Fig. 15. The arrangement of buildings and the pattern of space: Rome, Piazza S. Pietro, before realization of the design.



Pl. 66. Architectural drawing, left, shows Florence, showing from exterior; Florence, Giovanni Battista Piranesi (1758) (British Library, London); right, the interior of the Palazzo Vecchio, Giovanni Battista Piranesi (1758) (British Library, London). The Palazzo Vecchio, Florence, Italy, from the interior of the Palazzo Vecchio, Giovanni Battista Piranesi (1758) (British Library, London). The Palazzo Vecchio, Florence, Italy, from the interior of the Palazzo Vecchio, Giovanni Battista Piranesi (1758) (British Library, London).



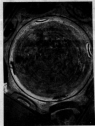
ARCHITECTURE



25-422 Architecture in paintings and engravings. Above, left, Place St. Michel, Geneva, as an engraving by G. F. Huet; right, Place St. Pierre, Geneva, as an engraving of 1771. Below, left, in right, St. de Place, St. Petersburg, and the tower of St. Mark, St. Mark, Venice; the old tower, below, St. de Place, St. Petersburg, as an engraving by G. F. Huet.



45. Raising, a French interior



[10] Building techniques. Left, above: Pinnas, sandstone gullies, at the polygonal walls, Gower, Fennish, north. Right, below: Pinnas, the Gower, north. Right, above: Pinnas, the Gower, north. Right, below: Pinnas, the Gower, north. Right, below: Pinnas, the Gower, north.



FIG. 108. Building exterior, stone, Tiber, Arch of Marcus Aurelius, Rome, left: Forum, right: interior, view of the Colosseum.



PL. 40. The architect's model. Left, above: interior, the Porchway; below: exterior, India, the interior; right, above: interior, the interior; below: exterior, India, the interior.



12-13 The architecture (each: Brooklyn, Florence). Left, above: Basil Chapel, detail of the vault. Center: S. Lorenzo, interior. Below: Basil Chapel, exterior. Right, above: Basil Chapel, exterior. Below: S. Lorenzo, interior.



FIG. 421. The architect's work. Left, above and below: Whitehead's two corner details of the Museum Laboratory. Right, above and corner: Whitehead's two details of the exterior of Villa Jose Capadocia, Mexico, south of Santiago de los Caballeros. Below: Villa "Los Mirasoles," Mexico (Mexico), Italy, detail of the corner.



Fig. 100. The architectural space. Below, the Baroque Chapel of the Gesù of Messina, interior. Below, right, Rome, St. Maria della Pace, wall of the facade. Right, Rome, St. Luca e Martina, exterior, detail.



18. 48) The architect's result. Harmanstad. Left: above Room 16 - Corridor, detail of the ceiling. Right: and below Room 16 - Corridor, detail of the ceiling.

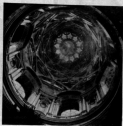
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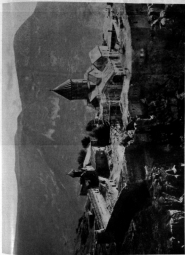


FIG. 68. The architect's studio. (Above) G. Mazzoni Church of the Sacrament, Venice. (Below) A. Venturi Villa Kaufmann, a House Collection, near Chicago, Italy.



⁸⁰ The author(s) thank: Shiro Hasegawa, Chigasaki, Japan; John Holmwood, Italy; David de Vries, of the Paris Math-Info Rights; F. Giam, students at the University of S. Paolo d'Agnes, Italy.





10. 40) View, isolated mountain mission (photographed in 1881, before destruction by earthquake in 1883).



Pl. 46. Ruins, the Mother of God, (front) View of the side and rear from the southeast (photographed in 1955). (Back) View of the front and side from the southeast (photographed in 1957).



Fig. 105. Stone Yeghghazar, Church of St. Nisyan, 18th-19th c. (left) Exterior from the northwest. Right: Interior, reconstruction of the apse. Below, left and right: Yeghghazar, near Yeghghazar, two capitals from the Cathedral, middle of 19th c. (see Fig. 106). Below, middle: from the interior of the Cathedral.

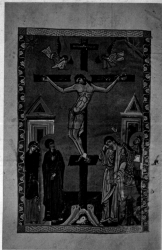


18. 189. Above, left: High relief representing King Smbat and King S., who commissioned the work. Detail of the wall above the main church of the monastery of Haghpat, 12th. Right: Tombstone, placed above in the southeast of Haghpat, and of a relative arch. 189.10. Below: Relief, Haghpat, decoration of window arch. 189.11a.









Pl. 221. Gospel Book, end of 19th cent. (Vladimir Khachaturian, *Yerevan, S. Lantsis (Eds., 1935, fol. 104v)*





Pl. 105. Above left: Agnate, Monastery, interior of the entrance. Right: St. Cathedra, interior, view of the transept. Below: Monastery, interior, view of the Chapel.



Fig. 65. Stone, left: Hagia Sophia of Ani, fragment of a capital, 10th cent. center: Ani, Hagia Sophia, decorative medallion around a seated figure, Hagia Sophia, Ani, 10th cent. right: Hagia Sophia, capital on the blind of left corner in Hagia Sophia, Ani, 10th cent.



Pl. 28. Arms, etc. From the site of the battle of the Marston, Essex, Essex. (Left) A long, slender dagger or spearhead. (Right) A curved, hook-like dagger or spearhead. (Top) A large, rounded object, possibly a helmet or a large arrowhead, mounted on a long, thin shaft. (Bottom) A large, oval-shaped object, possibly a shield or a large arrowhead, with a complex, multi-lobed shape and a central hole.



- Fig. 100. Left above: Detail of the side of a Persian sword, from Media, gold, Hermitage, Paris, Museum. From: *Monks in Iran*, London, 1960, cat. no. 100. Right above: Detail of the side of a Persian sword, from Media, gold, Hermitage, Paris, Museum. From: *Monks in Iran*, London, 1960, cat. no. 100. Right below: Detail of a Persian sword, from Media, gold, Hermitage, Paris, Museum. From: *Monks in Iran*, London, 1960, cat. no. 100. Right below: Detail of a Persian sword, from Media, gold, Hermitage, Paris, Museum. From: *Monks in Iran*, London, 1960, cat. no. 100.



Pl. 46. Above, left: Small helmet, from the same place as the one on p. 45. Right: Helmet of the same type as the one on p. 45. Below, left: Small helmet, from the same place as the one on p. 45. Right: Small helmet, from the same place as the one on p. 45.



107-108. Above, 107: View of a helmet in form of a mask of Phrygian, from Terra di Scutari, near Santa Maria. The mask part is iron. Right: "Shielding round shield," from Scutari, the same. From Scutari, another shield, about 1000 B.C., from Scutari, Phrygia. Above, 108: Iron Phrygian helmet, with skirt, from Phrygia. Below, the same helmet, Phrygia, a later metal shield, from Phrygia. Below, the same helmet, Phrygia, another example.

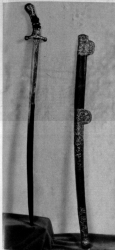
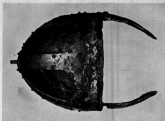
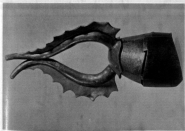


Fig. 100. Left: Sword found in tomb of Charles the Fat, Eastern Europe (Hungary), 9th-10th cent., Vienna Kunsthistorisches Museum. Right: Sword of Konstantin, 10th cent., found in Lorchfeld, Germany, Munich, Bayerisches National Museum.





Left: Helmet of a French knight, 16th century. Right: Helmet of a German knight, 16th century. Middle: Helmet of a German knight, 16th century. Bottom: Helmet of a German knight, 16th century.



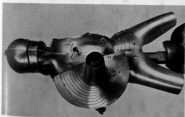


Fig. 1. Fritz Koenig, *Untitled*, 1961. Fritz Koenig's monumental sculpture, *Untitled*, 1961. Fritz Koenig's monumental sculpture, *Untitled*, 1961. Fritz Koenig's monumental sculpture, *Untitled*, 1961.

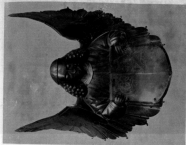


Fig. 2. Fritz Koenig, *Untitled*, 1961. Fritz Koenig's monumental sculpture, *Untitled*, 1961. Fritz Koenig's monumental sculpture, *Untitled*, 1961. Fritz Koenig's monumental sculpture, *Untitled*, 1961.

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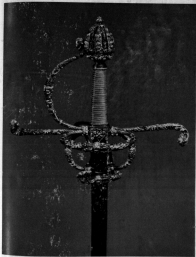


Fig. 10. *S. Pommerehne* and unknown goldsmiths. Hilt, ca. 1575-1585 of the sword of the Bishopric Palatine of Trier. Trier, *Landesmuseum* (after *Strohmeyer*).

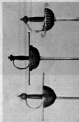
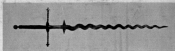




Fig. 1. A long sword with a straight hilt and a crossguard, featuring a large, ornate pommel at the base of the hilt. Fig. 2. A long sword with a straight hilt and a crossguard, featuring a large, ornate pommel at the base of the hilt. Fig. 3. A long sword with a straight hilt and a crossguard, featuring a large, ornate pommel at the base of the hilt. Fig. 4. A long sword with a straight hilt and a crossguard, featuring a large, ornate pommel at the base of the hilt.

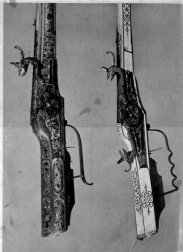




Fig. 40. Helm of the middle century of the 15th century, with a prominent crest, and a large, ornate metal helmet, likely a full-face helmet, featuring intricate carvings and a prominent crest on top.



Fig. 41. Cannon barrel, likely a full-face helmet, featuring intricate carvings and a prominent crest on top.





Fig. 48. Left, above: Russian helmet and coat of mail. Right, above: Russian helmet with coat of mail. Below, above: Russian helmet with coat of mail. Below, above: Russian helmet with coat of mail. Below, above: Russian helmet with coat of mail. Below, above: Russian helmet with coat of mail.



Fig. 10. Above left: Japanese helmet of lacquered iron with supports of gilded wood. Right: Japanese helmet of lacquered iron, with mask, with crest. Below: Japanese armor. All, Florence, Museo Estense.



PL. 46. *Virgin Enthroned with the Child*, head of the tomb of Cardinal de Brion, Marbrerie with architectural setting, R. Boncompagni.

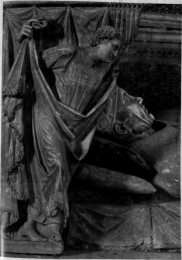


Fig. 101. Angel showing a vision, detail of the tomb of Cardinal de Sion. Marble, Orvieto, S. Francesco.



15. 1201 Statue of Charles of Anjou. Naples. Italy. Capodimonte Museum.



Fig. 40. Above: Birth of the Virgin, from the former facade of the Cathedral of Florence, Marble, ca. 1180, 4 ft. 4 in. height, in Berlin, Staatliche Museen. Below: Fragment of a seated figure, Marble, height, 11 1/2 in., in Berlin, Staatliche Museen.



FIG. 10. *Justice*, from the former square of the Cathedral of Florence, marble, 14th-15th c. (Florence, Museo dell'Opera del Duomo).



Fig. 10. Detail of the effigies, Maria, Cristo, S. Gerolamo o. Francesco.



18. 42. The shrine, built with polychrome tiles. Rome, St. Paul Outside the Walls.





Pl. 40. The Virgin and Child, from the inner apse of the Ghibelline altar of Florence. Marble, 13, 5 ft., 9 in. Florence, Museo dell'Opera del Duomo.



Fig. 46. Fragment of the Sarcophagi from the Arca del Cambio, Cambio, Italy, in the Museo Civico di St. John Lateran.



8. 86. A. Gaudí, Barcelona, Spain, left: Two chimneys of private houses, right: Gaudí Park in the Montserrat district, north of Barcelona, Spain; left: House (Maison de la Garde), right: House (Maison de la Garde), north of the city, left of the city.



Fig. 40. Left, above and center: A. Wiggens, two-story of the central section of the Paris International Exhibition of 1889. Below: B. Sommering, residence of the Grand Duke, Palais des Pies, Paris. Right, above: C. Gaud, Church of the Sagrada Família, Barcelona, interior and below: D. Van de Velde, house near Brussels; the architect's house in Weimar.







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Pl. 47. Wall painting, two figures, in Kucha (Kucha).









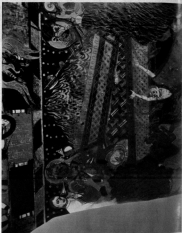
10. 100. Thicket growing in the Core of the Mammal, and Growth



PL 165. Above, left: Head from Tashkent, Russia, Paris, Musée Guimet. Right: Head of a deity from Khotan, China, 14, 1974, in Berlin, Museum für Völkerkunde. Below, left: Female torso from Tashkent, Russia. Right: Female torso from Tashkent, Russia, 14, 1974, in Berlin, Musée Guimet.



107. Above, left: Head of an unidentified personage, from Tashkent, Uzbek. Right: Head, from Khwarezm, Iran. Below: Head of a woman, from Tashkent, Uzbek. 108: Head of a woman, from Tashkent, Uzbek. Right: Head, from Tashkent, Uzbek. Left: Head, from Tashkent, Uzbek.



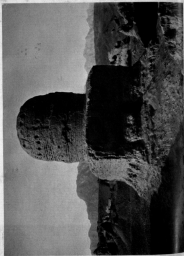




PL. 100. Painted vault decorations, detail, in the 'Cave of the Pygmies,' Knossos, Crete.



17. 18. Relief showing an episode of the Gandhara Ashoka, from the Cave of the Blackness, Gandhara, 1st cent. B.C. or 1st cent. A.D. (Gandhara Museum, Lahore, Pakistan).







PL. 46. *Manuscript*, from the Ajanta Caves, from Wall Painting, India, Museum of the University of California.



16. ART. Stone Tablet, seated, from Bamiyan, Afghanistan. (From the collection of the British Museum.)



Fig. 46. High pressure of a Submarine volcano. Photo courtesy of the U.S. Geological Survey, Washington, D.C.



WILL: Still painting, the composition of Blake's, in the library



Pl. 86. Wall paintings from Murgha. Above, left: An old man, 19th cent. Berlin Museum. Above, right: 19th cent. (detail). Below, left: 19th cent. (detail). Above, right: A seated deity, 19th cent. Berlin Museum. Below, right: 19th cent. (detail).



Pl. 48. Wall painting, aurochs, in Buxton.





PL 401. Above, left: Monolith pillar of the Shoshone-Maidu, Shoshone, Shoshone-Maidu. Right: Top of a pillar, Shoshone. Below, Shoshone-Maidu. Shoshone-Maidu on a pillar, Shoshone-Maidu.



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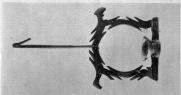


PLATE 100. (Left) Mask from Pashan, (Middle) Mask from Pashan, (Right) Mask from Pashan. (Left) Mask from Pashan, (Middle) Mask from Pashan, (Right) Mask from Pashan. (Left) Mask from Pashan, (Middle) Mask from Pashan, (Right) Mask from Pashan. (Left) Mask from Pashan, (Middle) Mask from Pashan, (Right) Mask from Pashan.



Pl. 85. (Above, left and right, and below, left) Pillars carved in high relief in stone's honor of the Rongye (Rong),
Korea, (left, Wood, right, Syntaxis). T-shaped commemorative pillar of the Rongye (Rong), Korea, (below).

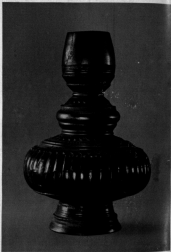






41. 42. Silver ornaments of the Min, Pao, Kai and Ming Lo, etc., northern Vietnam, from the 19th century. 43. Silver bracelet with gold granulated design, from the same region. 44. Silver bracelet with gold granulated design, from the same region. 45. Silver bracelet with gold granulated design, from the same region. 46. Silver bracelet with gold granulated design, from the same region. 47. Silver bracelet with gold granulated design, from the same region. 48. Silver bracelet with gold granulated design, from the same region. 49. Silver bracelet with gold granulated design, from the same region. 50. Silver bracelet with gold granulated design, from the same region. 51. Silver bracelet with gold granulated design, from the same region. 52. Silver bracelet with gold granulated design, from the same region. 53. Silver bracelet with gold granulated design, from the same region. 54. Silver bracelet with gold granulated design, from the same region. 55. Silver bracelet with gold granulated design, from the same region. 56. Silver bracelet with gold granulated design, from the same region. 57. Silver bracelet with gold granulated design, from the same region. 58. Silver bracelet with gold granulated design, from the same region. 59. Silver bracelet with gold granulated design, from the same region. 60. Silver bracelet with gold granulated design, from the same region. 61. Silver bracelet with gold granulated design, from the same region. 62. Silver bracelet with gold granulated design, from the same region. 63. Silver bracelet with gold granulated design, from the same region. 64. Silver bracelet with gold granulated design, from the same region. 65. Silver bracelet with gold granulated design, from the same region. 66. Silver bracelet with gold granulated design, from the same region. 67. Silver bracelet with gold granulated design, from the same region. 68. Silver bracelet with gold granulated design, from the same region. 69. Silver bracelet with gold granulated design, from the same region. 70. Silver bracelet with gold granulated design, from the same region. 71. Silver bracelet with gold granulated design, from the same region. 72. Silver bracelet with gold granulated design, from the same region. 73. Silver bracelet with gold granulated design, from the same region. 74. Silver bracelet with gold granulated design, from the same region. 75. Silver bracelet with gold granulated design, from the same region. 76. Silver bracelet with gold granulated design, from the same region. 77. Silver bracelet with gold granulated design, from the same region. 78. Silver bracelet with gold granulated design, from the same region. 79. Silver bracelet with gold granulated design, from the same region. 80. Silver bracelet with gold granulated design, from the same region. 81. Silver bracelet with gold granulated design, from the same region. 82. Silver bracelet with gold granulated design, from the same region. 83. Silver bracelet with gold granulated design, from the same region. 84. Silver bracelet with gold granulated design, from the same region. 85. Silver bracelet with gold granulated design, from the same region. 86. Silver bracelet with gold granulated design, from the same region. 87. Silver bracelet with gold granulated design, from the same region. 88. Silver bracelet with gold granulated design, from the same region. 89. Silver bracelet with gold granulated design, from the same region. 90. Silver bracelet with gold granulated design, from the same region. 91. Silver bracelet with gold granulated design, from the same region. 92. Silver bracelet with gold granulated design, from the same region. 93. Silver bracelet with gold granulated design, from the same region. 94. Silver bracelet with gold granulated design, from the same region. 95. Silver bracelet with gold granulated design, from the same region. 96. Silver bracelet with gold granulated design, from the same region. 97. Silver bracelet with gold granulated design, from the same region. 98. Silver bracelet with gold granulated design, from the same region. 99. Silver bracelet with gold granulated design, from the same region. 100. Silver bracelet with gold granulated design, from the same region.





45. 1971. Black vase from the Kachchikachik collection, Chaco, Peru, Museo de Historia.



Fig. 1. The group of statues of the goddesses Isis and Hathor, from the temple of Isis at Philae. The group is now in the collection of the British Museum, London. The group is made of dark granite and is about 100 cm. high. The group is a very fine example of the art of the Ptolemaic period. The group is a very fine example of the art of the Ptolemaic period.



Pl. 100. Above: Frontal plate of the ring to Rome, ca. 700 B.C., representing a construction scene, from Etruria, Chiusi, ca. 700 B.C. Below: Left: Terracotta head of a man, Etruria, ca. 700 B.C. Right: Terracotta head of a man, Etruria, ca. 700 B.C.



Pl. 102. Statue of Woman from Mohenjo-daro, 2500-1800 B.C. First hall of the Louvre Museum, Paris, France.



18. 188. Vase-urn of Euphrates, King of Lagash, from Telloh, Khuzistan, with copper base, No. 1871 in second half of 1880s. (Museum of the Louvre, Paris, France.)

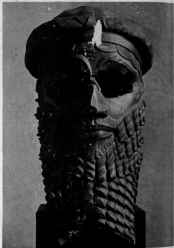




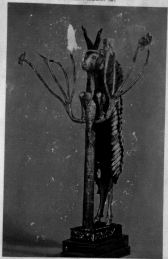
FIG. 100. Side of the Frieze of the Temple of Saturn, Rome. (The figures are seated and standing, as if representing the 12 months of the year.)



PL. 100. Palace walls of Sennacherib, King of Ashur, Chaldean, B.C. 705. Second Hall of the palace (B.C. 705).
Lyon.



PL. 106. Stone head of an Archaean ruler, perhaps Sargon, from Nimrud, Assyria, ca. 2300 B.C. (Reproduced with permission of the Trustees of the British Museum, London.)



PL. 100. *Winged goddess, from a ritual temple at El-Dokki, about 1400, and before 1350, B.C.* (The National Hall of Antiquities, Cairo, Egypt.)



PL. 105 Lion attacking a figure. Fragment of a small plaque. Ivory, light brown, somewhat greyed, etc. 175 m. (three half of centim.)
British Mus. London, British Museum.



Fig. 10. Bronze statue of Shiva, guardian of Angkor, from Indian Museum, Inc. 17 1/2 in. high of 10 collection (L. Paris, France).











PL. 53. Relief with scenes of war from the palace of Nibantaphorus III at Assuan, Egypt, 25th cent. B. C. (Smith, No. 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000).

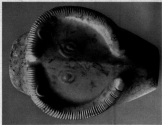
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Pl. III. Relief of a warrior. Westwork of the Royal Gate at Mohenjo-daro. Harappa, Punjab, India. Third quarter of 2d millennium B.C. (Harappan, Archaeological Museum).



PL. 104. Left: Figure of a standing, probably from Benin, Benin, ca. 1700-1800. Second half of 20th century. Right: Figure of a seated, probably from Benin, Benin, ca. 1700-1800. Second half of 20th century. Both: Paris, France.





PL. 55. Stone relief with Mesopotamian inscription, from Suse (18, 27 B. C.). First half of the inscription is in Akkadian. In the left margin of it is also in the Assyrian language. (British Museum, London.)



10. 100. Reliefs with inscriptions in Hittite hieroglyphs, from the "processional road" of the palace of Carchemish. Scale: 1:10, 1:10 and 1:10. The first half of the inscription (a-c) unknown. (Archaeological Museum)



18. 185. Above: Head of a caryatid with acanthus, from Parthenon, Acropolis, Athens, 447-438 B.C. Below: Head of a caryatid with acanthus, from Parthenon, Acropolis, Athens, 447-438 B.C. (Both: American Museum of Natural History.)



18. 184. Egyptian bronze, from the area of Komos (15, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th). (15, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th). (15, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th).



PL. 125. Stucco relief of the seated Aphrodite, from the Villa of the Papyri, Herculaneum, 170-100 B.C. (Photo by the author, 1950).



Pl. 122. Above: Storage jar with dark handle, from Miletus, third quarter of 8th cent. B.C. (British Museum, Archaeological Museum). Below: Storage jar with dark handle, from a tomb at Sardis, ca. 700 B.C. (British Museum, Archaeological Museum).

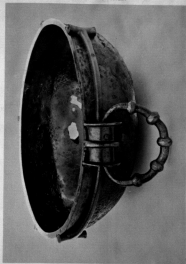


15. 156. Stone Pyramid, Pharaoh's tomb, in North Sudan, Egypt, 18th century B.C. (left); Pyramid of the Great Pyramid, near Giza, Egypt, 25th century B.C. (right).



84.104. Fragment of rock from the so-called "Iron Tomb" in the Kufur Dagh area, middle of 1st cent. B.C. (Grove 1932, no. 104, taken from original picture, *British Museum*; photographed from a cast in the University of Sydney Archaeological Institute. Ht. 10.5, 7.5; w. 10.5, 7.5).









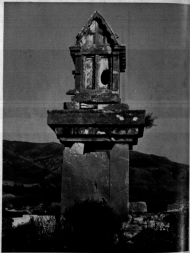
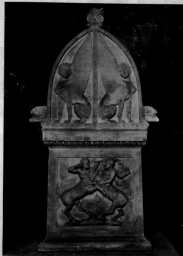


FIG. 100. Epistyle tower, at Karaman, 10th cent. A.D.



Pl. 55. *Stele with relief of two figures, from Sidon, no. 481. L. 1.10 m., H. 0.80 m., W. 0.40 m., (Pl. 55, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100).*



PL. 126. Reliefs from Lycian tombs. Above: Warrior, Goddess, and attendant, from the "Great Tomb," Kestel, ca. 180 B.C. (1937, inv. 247); below, left: Hero and lion in combat, from the "Great Tomb," Kestel, ca. 180 B.C. (1937, inv. 247); right: Hero and lion in combat, from the "Great Tomb," Kestel, ca. 180 B.C. (1937, inv. 247). (Reproduced by permission of the British Museum.)

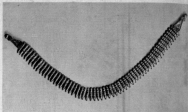


25. 189. Above: Triangular pediment with caryatids, from a temple at Siphnos, ca. 480 B.C. (Limestone; by all accounts, an African). Below: Frieze, offerings to the deceased and the carrying off of the body, from the so-called "House Tomb," Siphnos, ca. 480 B.C. (Marble, 1/8, 47/8 in. = 1 1/4, 1 in. Both London, British Museum).



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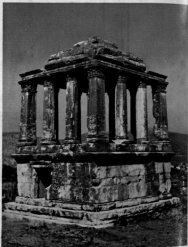




PL. 26. Above: Necklace, from a tomb in Egypt, Archaic period, 2500 B.C. Below, left: Plaque showing a group of birds, from a tomb in Egypt, Archaic period, 2500 B.C. Below, right: Plaque showing a group of birds, from a tomb in Egypt, Archaic period, 2500 B.C. Below, right: Plaque showing a group of birds, from a tomb in Egypt, Archaic period, 2500 B.C.



PL. 101. (Upper relief, above: Warriors in a chariot, fragment from Girdic, ca. 1800 B.C.; lower relief, left, *Belshazzar's Feast*; center, *Warrior on a horse*; right, *Warrior on a horse*; lower relief, right, *Warrior on a horse*; lower relief, right, *Warrior on a horse*; lower relief, right, *Warrior on a horse*.)



PL. 10. Temple dedicated to Krishna, near the city of Ujjain, B.C.